COAL AGE

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House-Cleaning Time

By Rufus T. Strohm

THERE comes a time in early spring
When housewives get extremely busy,
And set their mops and brooms a-swing
Until they drive the household dizzy;
They scrub the floors and beat the rugs,
Wash all the woodwork, dust the ceilings,
Eject the spiders, moths and bugs,
With no regard for insect feelings.

THEY gather rubbish by the ton
From closet, cellar, hall and attic,
And keep the ashman on the run
Until his breathing grows asthmatic;
But when the house is clean and free
Of trash and litter evil-smelling,
It then becomes what it should be—
A mansion fit for human dwelling.

THE miners' union ought to take
A lesson from the housewife's duties,
And seize an opportunity to shake
Its garments free from nasty cooties;
For Bolshevistic bugs and fleas,
Within its shack have snugly nested,
And anarchistic ants and bees
Its inner chambers have infested.

THEY'VE stung it with their poisoned darts,
And bit it in and out of season,
Till, driven frantic by the smarts,
It's lost its balanced sense of reason;
And that's why common people choose
To note its actions with suspicion,
Nor will they modify their views
Till it regains a sane condition.

* * *

IT'S got to bounce the rampant Reds,
Expel the troublous Bolsheviki,
And maybe dent the wooden heads
Of radicals who've grown too cheeky;
Then, having purged its council hall
Of law and order's worst maligners,
It may at length be fit for all
The country's honest, decent miners.

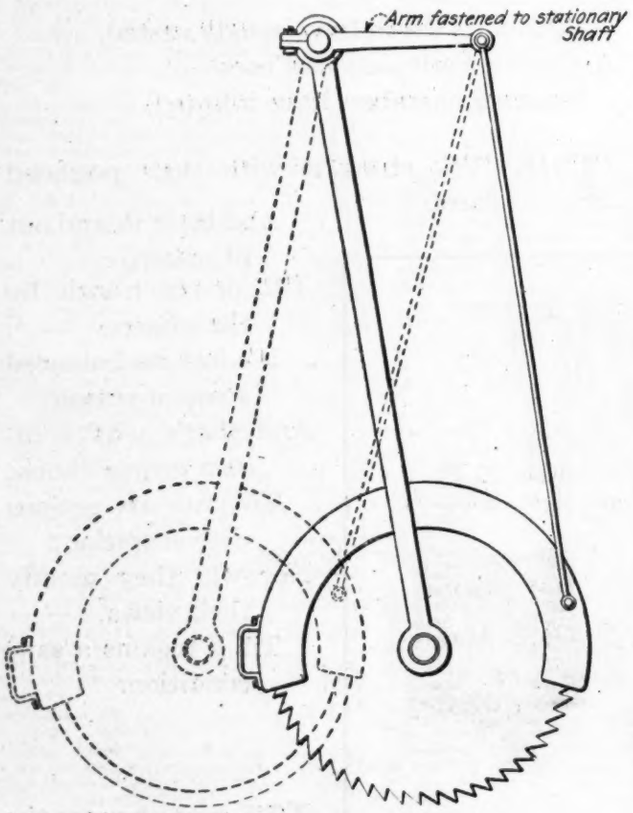
IDEAS AND SUGGESTIONS

PRACTICAL SCHEMES THAT MAKE THE DAY'S WORK EASIER

Safety Device for a Cutoff Saw

DEVER C. ASHMEAD
Tarrytown, N. Y.

An interesting safety device has been devised by the master mechanic of the Burnside Colliery of the Philadelphia & Reading Coal & Iron Co., near Shamokin, Pa. This device works automatically and throws a



SAW GUARD IN PLACE

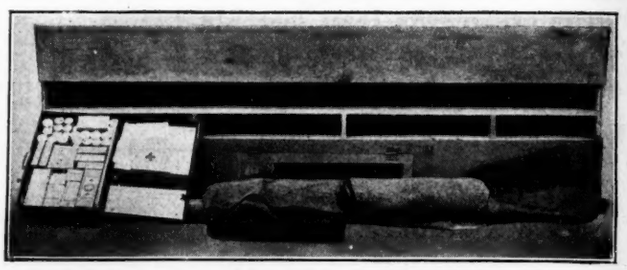
shield between the man operating the cutoff saw and the saw itself. When the saw is pulled forward by means of a lever a semicircular shield is thrown between the operator and the saw, just allowing sufficient space for the timber to pass between the saw and the shield. The accompanying diagramatic illustration shows how this device operates.

Storing First-Aid Supplies in the Mines

Nearly every coal mine plant has some particular building or portion of a building that is utilized for the storage of first-aid supplies. Taking the supplies into the mine and there storing them has always been a problem as it is always difficult to maintain the proper temperature and humidity. Materials such as bandages not in A-1 condition are even more dangerous sometimes than no materials at all.

A simple and inexpensive box divided into three main longitudinal compartments can be readily constructed at the carpenter-shop, and can be made to serve an excellent purpose. Little explanation is needed as the accompanying illustration is practically self-explanatory.

The upper compartment is used to accommodate two stretchers. The middle compartment is divided so as to hold a first-aid cabinet, two woolen and one rubber blanket. The lower compartment is equipped with two



UNDERGROUND FIRST-AID SUPPLY BOX

60-watt, Mazda lamps employed to generate heat for keeping the supplies dry. Holes may be bored in the rear of the box to allow adequate ventilation. Any suitable dimensions can be used in constructing such a box.

At the mines of the Stonega Coke & Coal Co. in Wise Co., Va., one of these boxes is kept within 2,000 ft. of every man underground. Each miner knows the location of the box nearest his working place. Five or ten minutes delay in giving treatment in case of a serious accident may be the dividing line between life and death.

Safe Guards for Trolley Wire

BY G. E. DAUGHERTY
Pikeville, Ky.

How to build the most reliable and safest trolley guard is a question that has been discussed from many different viewpoints. The perfection of any system depends largely on the taste of the workman doing the job or his consideration for the adage, "Anything worth doing at all is worth doing well." There is considerable room for improvement on the present method of safeguarding trolleys in mines. This is a detail for the inventive mind upon which to do something really worth while and win fame and fortune.

Poor workmanship in hanging wire is the first cause of difficulty in keeping it guarded. A trolley frog in the wrong place, too few insulators to hold the wire level or maintain uniform curvature are matters to be first considered if guards are to stay up and haulage

carried on. This does not take into consideration the time and money saved from broken trolley poles and consequent delays.

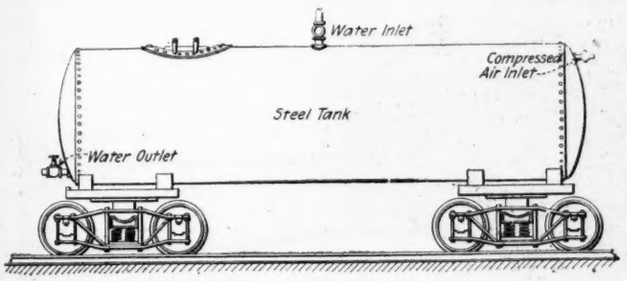
An adequate and reliable guard is the next requisite. This should extend from the trolley frog to 2 ft. beyond the opposite pillar so as to comply with the mining law asking for guards at all places where men regularly pass under the wire, when less than 6½ ft. above the rail. The usual failure under this condition is to guard the space only where the motor passes under. Other places neglected entirely are side tracks, sand boxes, pumps, manway crossings, room necks, trap doors, etc. Every care should be given to safeguarding the trolley on haulageways that are also used for traveling.

The rubber guard is meeting with much favor among east Kentucky operators, being effective and easily installed. Old fire hose is the usual source of supply, but new hose is being used in many places. Guards of this kind have been in use for two years without much attention in the mines of the Pond Creek Coal Co. of Stone, Ky.

The following precaution is necessary in order to secure the best results. Insulators should be hung every 4 ft. on curves, and somewhat farther apart on straight wire. Split one side of the hose and hang it under the insulators and over the trolley clamp. Round off the end where the trolley wheel enters; in some cases a stiff wire is used to spread the mouth of the hose apart. Care should be given to the trolley wheel bolt, keeping it smooth so that it will not tear the guard.

Water Supply for Drills

The Philadelphia & Reading Coal & Iron Co. at the Burnside Colliery has a large water tank with a capacity of about 2,000 gal. mounted on trucks for carrying



AIR PRESSURE WATER CAR

water into the mine to supply the drills used in driving the headings.

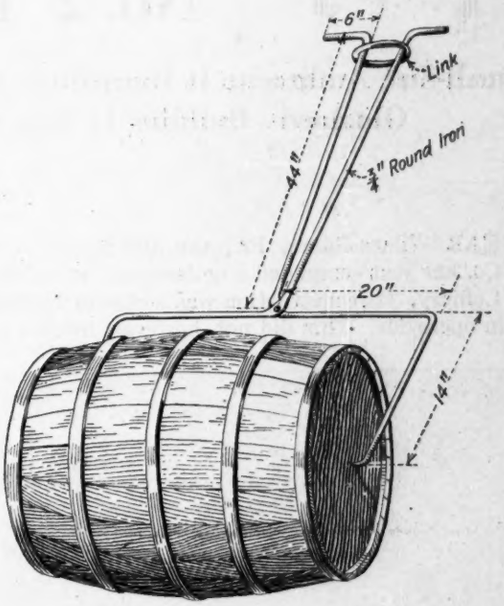
This tank is made of steel and is so arranged that the water can be forced out under pressure by attaching a compressed air pipe to the proper inlet in the tank. The accompanying illustration shows the arrangement of the connections.

Homemade Device for Handling Oil Barrels

By Jack L. Ball
Amsterdam, Ohio

There is no task around a coal mine that meets with more disfavor than handling leaky oil barrels. This is a disagreeable job, especially in cold weather.

The simple device shown in the accompanying illustration is used to handle barrels at a certain mine with highly agreeable results. It is not necessary to touch the barrel with the hands, and it is easy for one man to move a full barrel over almost any kind of a rough surface.

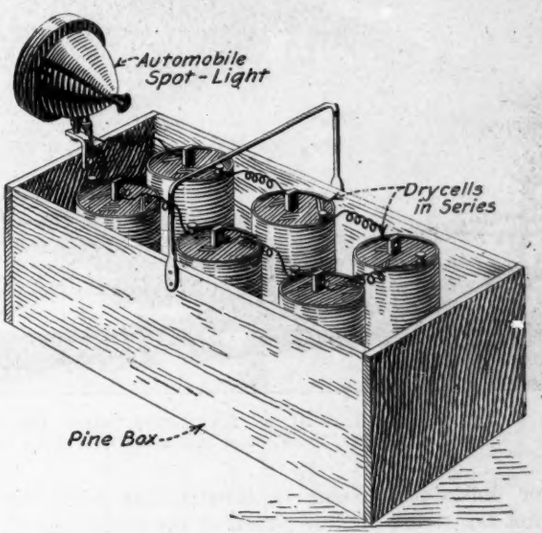


HOW THE BARREL TONGS ARE USED

The measurements shown are for a standard barrel. The points can be shaped so that the injury done to the heads of a barrel is of no consequence.

Safe, Homemade, Mine-Rescue Searchlight

In mine rescue work the rescue party is in many instances handicapped through having insufficient light. Usually, conditions in the mine are of such a nature that open lights cannot be used with safety. Ordinary safety



SAFE SEARCHLIGHT FOR UNDERGROUND USE

lamps or the small electric flash lights are or may be inadequate for the purpose intended. In all cases it is advisable to have a portable searchlight as part of the mine rescue equipment. The accompanying illustration shows a portable light of high power that may be safely used in a gassy or dust-filled atmosphere.

Colliery Boiler Plant Satisfactorily Burns No. 2 Tank Barley

Small-Size Anthracite Is Burned on Automatic Stokers and Satisfactory Results Are Obtained—Building Is Kept Cool Even in Summer By Draft Fans

By D. C. Ashmead
Tarrytown, N. Y.

NEAR Wilkes-Barre, Pa., the Pennsylvania Coal Co. has just completed a boiler plant at its No. 14 Colliery. Its construction was a case of rebuilding while in operation. This did not, however, involve intricate or delicate problems in construction work, so I shall not lay stress on this phase of the situation.

The new boiler house is of brick and concrete construction of the latest design and is architecturally attractive. The foundations and floors are of concrete and reinforced concrete, while the walls and stacks are built of brick.

At the present time the full boiler horse power of the plant has not been developed. There are now in continual service twelve 150-hp. Babcock & Wilcox water tube boilers and five 283-hp. Stirling boilers making a total of 3,215 b.hp. At present there is sufficient space for the installation of four more Babcock & Wilcox boilers and three more 283-hp. Stirling boilers. This will increase the boiler capacity of the plant to 4,664 hp. The foundations for the additional boilers are in place and the company expects to install at least one if not two of the Stirlings some time during the spring. The boiler working pressure in 135 lb. gage.

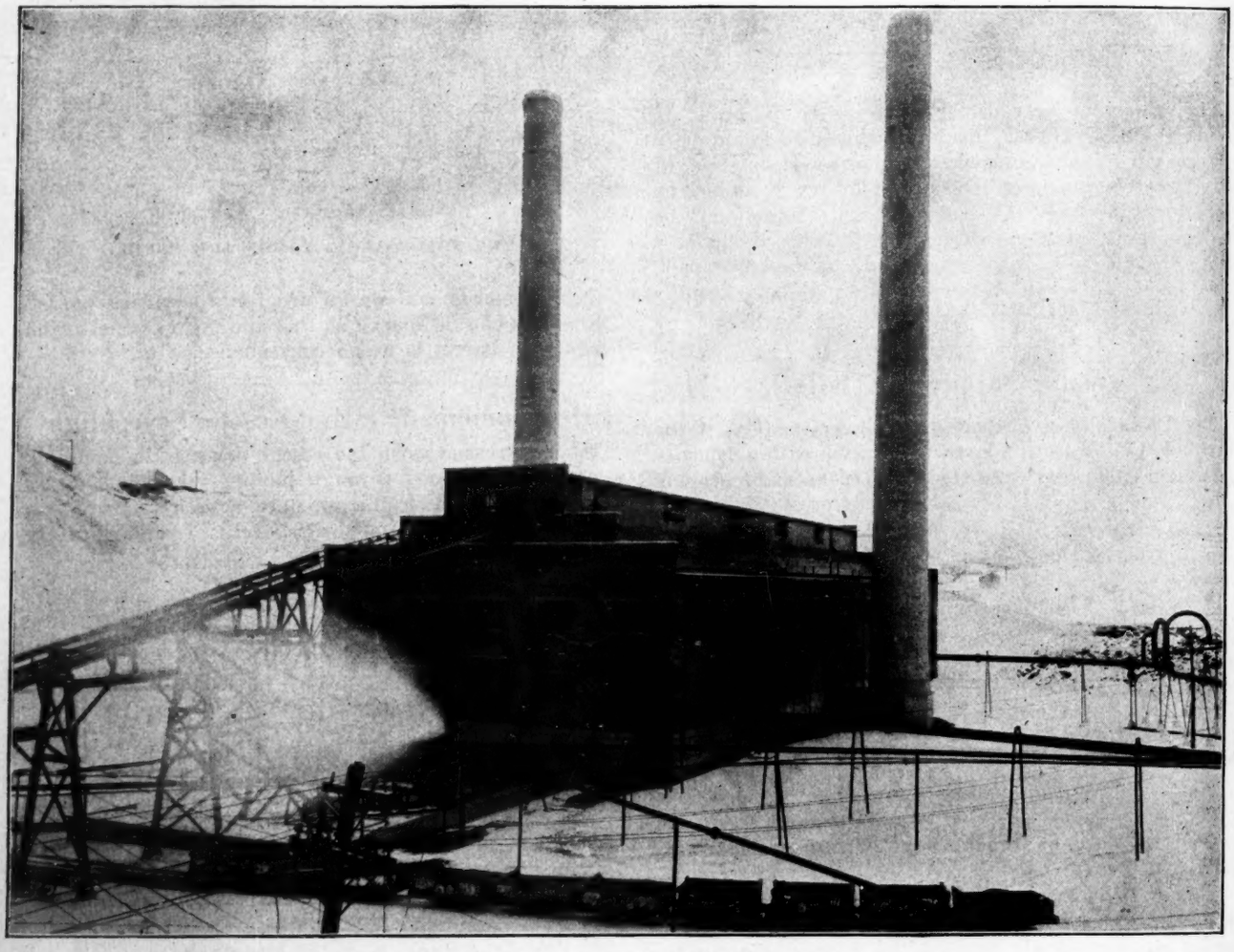


FIG. 1. EXTERIOR VIEW OF THE NO. 14 COLLIERY BOILER PLANT
Concrete, brick, steel and glass have been used exclusively in the construction of this building

The coal used in generating steam is No. 2 tank barley and is fired on Coxe stokers. These stokers all have a width of grate of 5 ft. and a length of grate 10 ft. 4 in. with the exception of two which have a grate

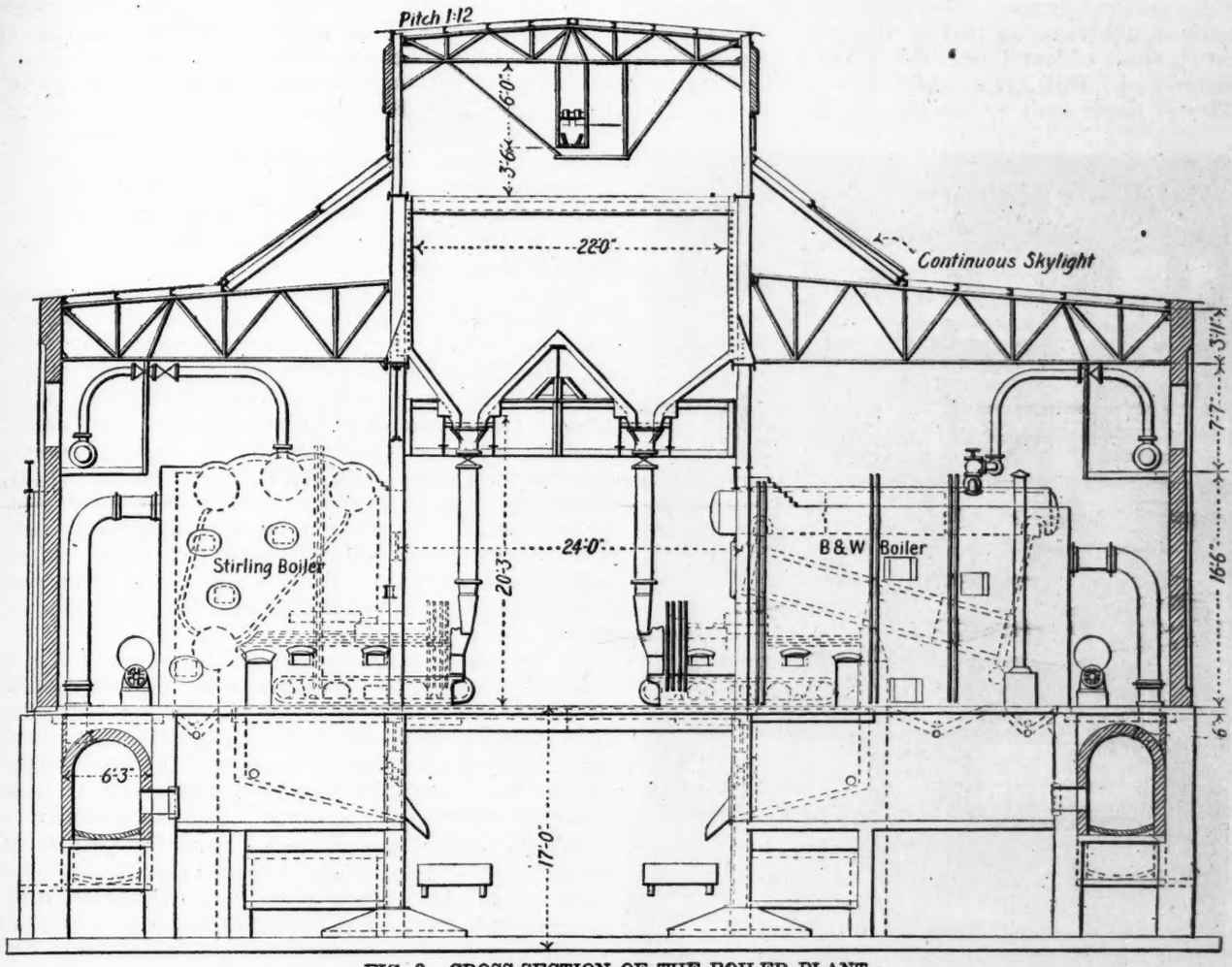


FIG. 2. CROSS-SECTION OF THE BOILER PLANT

The convenience of the arrangement of conveyor, bunkers, downcomers, stokers, boilers, breechings, flues and ash tunnel are immediately apparent.

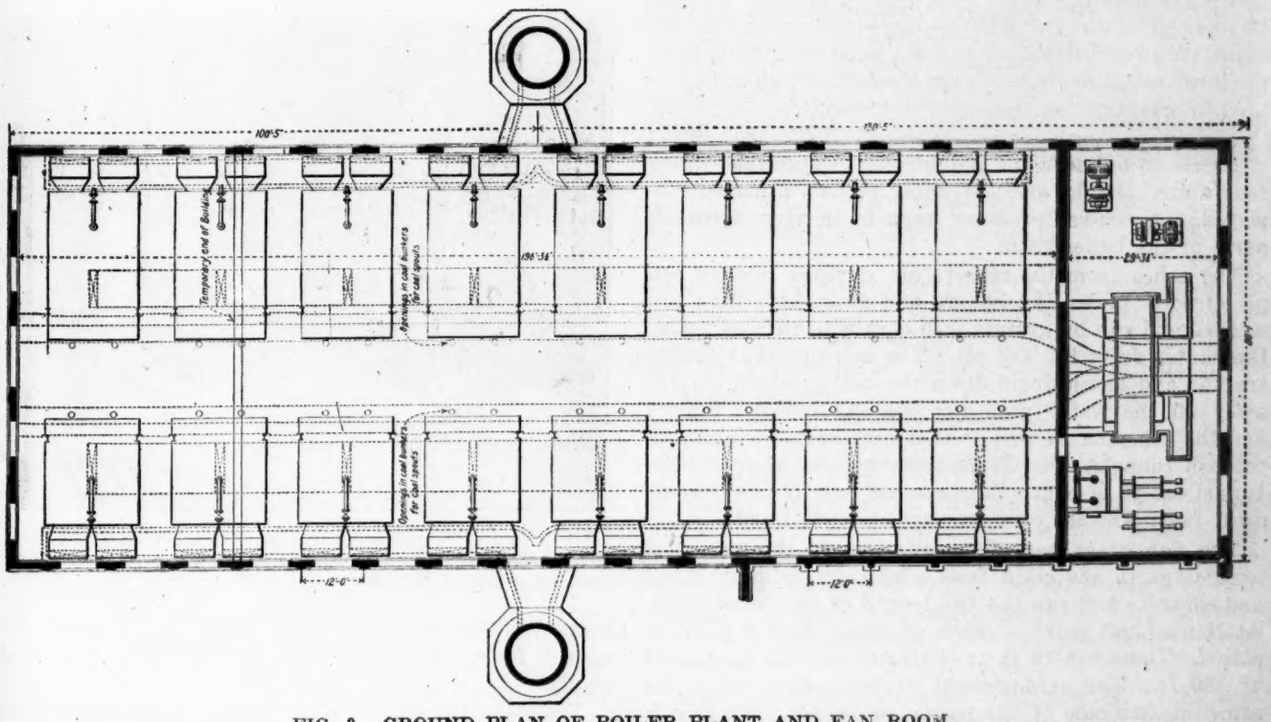


FIG. 3. GROUND PLAN OF BOILER PLANT AND FAN ROOM

Features of design that immediately appeal to the experienced plant operator are the spacious firing alley and the adequate interval between the boiler settings

width one foot greater. The length of these grates is, however, the same as that of the rest. The stokers have a speed of travel of 2 to 8 ft. per hour depending on the load. They are driven by a 5-hp. direct-current 250-volt motor built by the General Electric Co. The

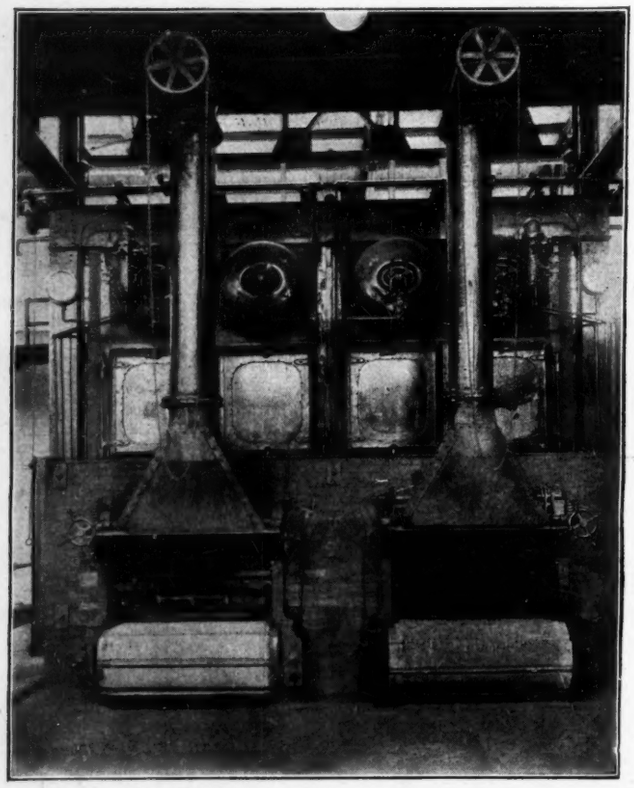


FIG. 4. FRONT VIEW OF THE STOKERS
The coal valve wheels, chains and gate wheels are plainly visible

coal is fed to the stokers, as is shown in Figs. 4 and 5, through steel pipes 14 in. in diameter and the amount of fuel fed to the grates is regulated either by hand or automatically. Intake valves are placed near the top of the pipes and directly below the bunker. These are operated by chains from the boiler-room floor.

Williams water columns are used and the feed water is regulated by means of Williams and Copes feed-water regulators. High- and low-water signals are also employed. A central pressure gage is in view from all parts of the boiler room.

The ashes from the stokers are dumped into an ash pit directly under the boilers and from here they are washed and run by gravity into cars which travel under the chutes from the ash pit. The ash tunnel is double tracked and has a drain down the center which carries away all the water used for washing out the boilers and the ash pits, as well as that necessary for cleaning the ash tunnel. The air is kept cool and pure in this tunnel, as it is continually sucked out by the forced-draft fans. The ash cars are pushed out by hand.

The flue gases pass from the boilers through steel breechings to the main flues which are built of brick and concrete and run the full length of the boiler room. At the central point of each of these flues a stack is placed. These are 10 ft. in diameter and have a height of 190 ft. The arrangement of flue and stack is the same on each side of the power house, and each side is independent of the other.

At one end of the boiler room is a small engine room (Fig. 3) in which all the auxiliary machinery for operating the boiler plant is placed. There are two forced draft fans of the multivane type 12 ft. in diameter and built by the B. F. Sturtevant Co. Each has a capacity of 175,000 cu.ft. of air per minute against a pressure of 2½ in. of water. These fans are driven by 14 x 16 in. engines direct-connected. The engines are of the side-crank, single-valve, inclosed, self-oiling type and were built by the Ridgway Dynamo & Engine Co. They operate under automatic control.

The fans draw air from the top of the boiler house and also from the ash tunnel through specially built air conduits. When they were first installed they took air from the engine room only, but it was found impossible to keep the windows in the engine room, when closed, from breaking. Other arrangements consequently had to be provided. The change in source of supply was made and as a result the ash tunnel and the top of the boiler house are not now excessively hot even in the summer. The air from the fans is forced through a tunnel that passes under the front part of the boilers and is admitted to the firebox by a valve that regulates the supply of air in accordance with the needs of combustion.

At the present time the feed-water pumps are of the direct-acting type, but these are to be replaced shortly by centrifugal machines. The feed water is recorded by a Venturi meter on the 6-in. pump-discharge line. A Webster open feed water heater of 6,000 hp. capacity is used for heating the feed water and raises its temperature to 200 deg. F. before it is sent to the boilers.

Besides the feed pumps, the fans, and the feed water heater in the engine room, a small substation is here located, furnishing power to the mine. This substation contains two duplicate motor-generator sets. The generator half is 250-volt direct current, while the motor is 2,300-volt, 3-phase, 60-cycle, alternating current. A 10-panel General Electric switchboard for handling the

FIG. 5. INTERIOR OF THE BOILER ROOM
Note the vertical down-comers and the big steam gage, visible from all points of the room.

current is also installed. The current is at present furnished from another of the Pennsylvania Coal Co's plants.

The coal bunkers, or rather bunker, extends the entire length of the boiler room. Its top is 34 ft. 4 in. above the

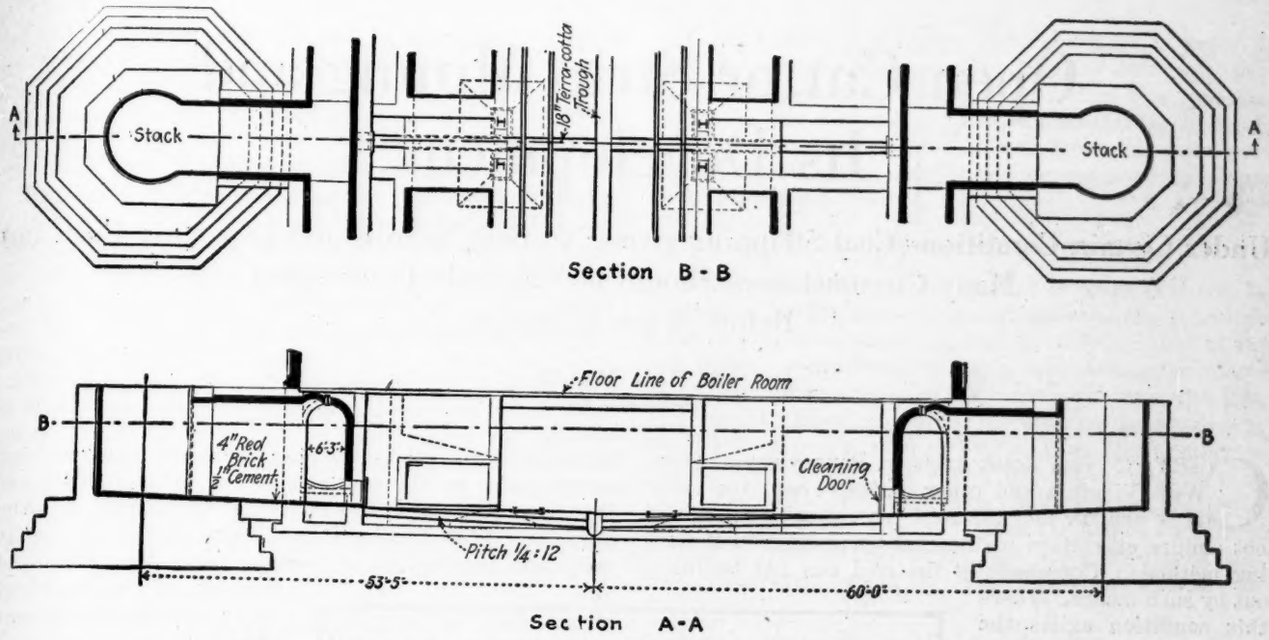


FIG. 6. PARTIAL PLAN AND CROSS-SECTION AT CENTER LINE OF STACKS
The relative positions of the stacks, flues, draft ducts and ash tunnel are here apparent.

boiler room floor. It is 16 ft. deep and can be filled to a height of 5 ft. above its top. The total width is 22 ft. in the clear and there is one coal outlet on each side directly in front of each stoker. The bunker is 200 ft. 10 in. in total length and has a capacity of 1,927 tons of coal, when filled up to the bottom of the distributing conveyor. This bunker is built of concrete and rests in a steel frame. The sides are of reinforced concrete.

The coal is brought from the tank barley pocket in the breaker and carried to the top of the boiler house above the bunker by means of a drag-line scraper. This conveyor traverses the full length of the bunker and the coal drops through slots in the bottom of the drag-line trough and into the coal bunker. These slots are of course so arranged that they may be closed. A coal meter is placed in this conveyor line, recording the amount of coal delivered to the bunker. The scraper line is operated through a belt by a 36 h.p. General Electric alternating-current, 60-cycle, 110-volt motor.

A fire wall has been placed between the engine room and the boiler room. The roof is supported by steel trusses and a long ventilator or skylight extends almost the full length of the building. This admits light and air and helps to keep the building cool in the summer. A steel walkway or balcony is hung in the rear and slightly above the tops of the boiler, giving ready access to any part of the piping, or the outside of the boilers themselves. This balcony runs around all four sides of the building, while iron ladders reach from it to the floor of the boiler room. From this balcony steel stairs extend to the top of the coal bunker and a steel gallery runs the full length of the scraper line.

The steam piping throughout the engine and boiler rooms is protected with 85 per cent magnesia covering. The main steam header is 14 in. in diameter and the individual steam pipes from each boiler are 6 in. in diameter. The feed water line is 6 in. cast-iron pipe. Some of the results obtained in this plant are as follows: Rated boiler capacity, 3,215 hp.; watergage air pressure, 2½ in.; temperature of feed water, 200 deg. F.; evaporation actual, 5.6 lb. of water per pound of fuel; fuel, tank barley; steam pressure, 135 lb. gage; load on boilers, average, 150 per cent.; peak loads, 200 per cent.

The Pennsylvania Coal Co. is considering constructing a large generating station in connection with this power house during the coming spring and increasing

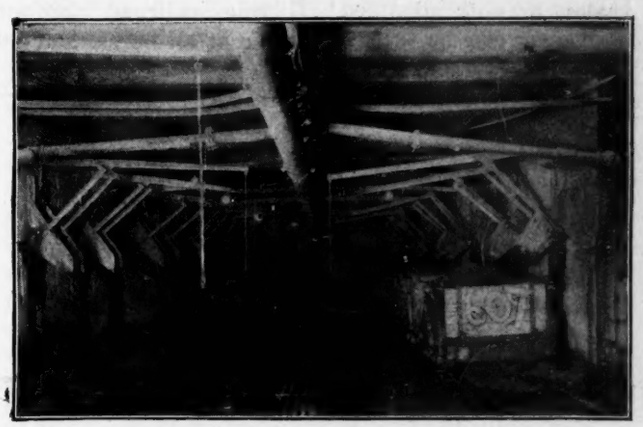


FIG. 7. VIEW IN THE ASH TUNNEL
Draft air is drawn from this passage, keeping its atmosphere clean, cool and free from dust at all times.

the capacity of the boiler plant to the full amount or possibly enlarging it. The additional power thus generated will furnish electricity not only for this plant, but for a number of other operations belonging to the same company.

Diversion of Coal to Cease

Chairman Spencer, of the Central Coal Committee, issued instructions to cease the diversion of coal, and to buy the coal at whatever price is necessary. The Pennsylvania R. R. is now offering wholesalers to take over their contracts with collieries for 30 days at whatever price the wholesalers have the coal bought from the collieries.

It will pay the wholesaler 15c. per ton profit and will agree to pay cash, ten days after receipt of invoices.

Open Cut or Strip Mining and Its Development

Under Certain Conditions Coal Stripping gives Excellent Results and Low Unit Costs but Many Circumstances Should be Carefully Investigated Before Work is Started

By H. B. Miller
Pittsburgh, Pa.

CERTAIN coal areas exist in Pennsylvania, Ohio, West Virginia and other states, where the cover is so shallow and the roof "so rotten" that it will not endure extraction of the coal by underground mining methods. Consequently the coal can not be taken out by such means. Where this condition exists the open cut or stripping method should be employed, as it is the only profitable manner in which beds lying horizontal or nearly so having an overburden of alluvium, shales, or soft stratified sand rock can be mined. In the anthracite field where the beds are thick, heavy sand rock may be profitably moved. In the development of stripping territory, the method of operation selected depends on the shape and size of the tract, the average depth of overburden, local topography and the output required. In the preliminary examination, the source of water supply and its purity should be taken into consideration, as the average plant will require about 35,000 gal. of water per day of 9 hr., if the shovels are to be operated by steam. This amount will also depend upon the number and size of the units employed.

In selecting a method of strip-pit operation the shape and size of the area worked, the thickness of overburden, local topography, required output, source and quality of water supply, position of state and county roads, buildings and wooded areas above the crop line, railroad approach and rights of way must all be considered.

State and county roads crossing the property must also be taken into consideration, since obtaining permission for a change of their location is sometimes quite difficult, and if not granted a problem is immediately presented in the way of economical operation which may affect the success of the undertaking, as well as the plant layout. Buildings and wooded areas above the crop line, as well as railroad approach, rights of way, and the per cent of grade are also to be considered. If the plant is to be operated by electricity, the proximity to a source of power supply must be considered.

Crop Coal is Usually Unmarketable

In calculating the amount of tonnage available in a stripping area where there is a crop line, it is not wise to estimate from the actual crop, but from a line 5 or 10 ft. away from the crop line, as the coal from this point to the actual crop will probably be so disintegrated as to be unmarketable. It therefore should not be included in the tonnage estimate, which should be figured conservatively.

Output and method of operation should be adjusted to the amount of tonnage available, in order to secure minimum cost of production, including interest and amortization on the capital invested for equipment and that expended in actual stripping operations. Steam-shovel methods involve large capital outlay for equipment and preliminary stripping; hence they should be limited to work where there is sufficient tonnage available to guarantee a suitable return on this investment plus interest during the life of the operation. When properly installed and operated, stripping plants yield enormous outputs at low unit costs.

The general features of steam-shovel mining appear simple; but good management, close attention to details and systematic work are essential to success. The shape and position of the territory to be stripped should be predetermined so as to permit intelligent planning of approaches and track lay-outs, the minimizing of delays and the handling of the maximum amount of tonnage. Maintenance and repair of tracks and equipment are also important. Since the unit cost, with a given equipment, varies inversely with the output, there should be no preventable delays when the plan is once put into operation.

Quite an area may be stripped before actual mining of coal begins, or mining and stripping may proceed simultaneously, when a sufficient area has been uncovered to avoid interference between the two operations. The latter plan is the more advisable, as it reduces the initial investment required before production begins. The direction of the box cuts or excavations will be governed by the topography and average depth of overburden, and the disposition of the excavated materials on the spoil bank. Their arrangement must be such as not to interfere with or embarass subsequent mining.

Operating costs are lowest when there is no expense for transporting stripped material to the waste dump, and the shovel output is increased by eliminating delays incident to loading into cars. The maximum daily output is a function of shovel capacity, depth of stripping and thickness of coal.

The large type of shovel, with long boom and big bucket, much used in coal stripping, moves on tracks laid on the coal bed. The overburden removed is dumped to one side, thus creating the mounds of excavated material termed "spoil-banks." The first through cut is

termed the "initial box cut," and in subsequent cuts the materials removed are deposited in the previous excavation, thus creating another spoil bank. The large revolving shovel, has its most common application in stripping bituminous-coal deposits, on account of its operating range and capacity for sustained output.

The uncovered coal is generally blasted and loaded with a light shovel into cars. This shovel should be of the caterpillar traction type, since this variety can readily change its direction for operation, has a greater bearing area, and provides more stability, as well as being able to move and work over much softer bottom than the ordinary wheeled shovel.

On a stripping area of appreciable size, a large type of shovel having an 85 to 90 ft. boom, with a 5 to 8-yd. dipper should be used. As an example, we will assume that it is desired to strip an area having about 25 ft. of overburden, and using a shovel with an 85 ft. boom, 60 ft. handle, and a 5 cu.yd. dipper. This will make an initial box cut, overcasting the excavated materials or spoil to one side. When the shovel is in operation it revolves about a central axis or line termed the center line of rotation. Taking the pitch of the boom at 45 deg. the following results are obtained: The distance from center of track to base of box cut bank is 31 ft., or the width of the box cut at bottom is 62 ft. The width at the top would be 73.6 ft., the slope of the box cut being about 1 to 5.

The spoil bank is figured on a 20 per cent swell of materials. The distance across the base of the spoil bank would be about 109 ft., and across the top, 16 ft. From the original ground line to the top of the pile would be 37 ft., and from the top of rail on which the stripping shovel stands to the top of the spoil bank will be 65 ft. The slope of the spoil bank will be 1 to 1¼. The dumping radius from center line of rotation to far side of pile, will be 100.5 feet.

Sometimes instead of casting materials to one side only, conditions warrant the overcasting of spoil to both sides. In this case the box cut width remains the same as formerly, but each spoil area since there are two instead of one is reduced. Then again, as in starting on a hill-side crop, it is desirable to make the initial cut as a side cut. Later on box cuts would be made thus developing spoil areas on one side only.

One Shovel May Move 5000 Cu. Yd.

Working under favorable conditions, such a shovel as assumed above could remove, say 5,000 cu.yd. of material in a day of 9 hr. It would be safer, however, to estimate its capacity at, say 4,500 cu.yd. per day. At times it may be necessary to run the large machine night and day, in order to keep ahead of the small loading shovel. For this reason, the large shovel should be equipped with a 1-kw. 30-volt, steam-turbine generator set. The necessary lights and dynamo should be on the shovel before it leaves the shop.

For loading the coal, a small revolving type of shovel should be employed. This should have, say, a 30 ft. boom, and a 19 ft. dipper stick. Also a special flat-front coal-loading dipper of about 1½ cu.yd. struck measure. If the shovel is mounted on caterpillar trucks, it can be moved about more readily, as this method of support eliminates the use of platforms or tracks and consequently the extra pit labor required. This form of support enables the machine to make a wide cut necessitated by the great range of the coal-stripping shovel that has preceded it.

It also secures the higher lift necessary, in order to load coal into gondolas or other types of coal cars, say, on top of a 6-ft. bed of coal. A shovel of this type can load three 50-ton standard railroad gondolas in one hour, handling run-of-mine coal direct from pit into car. Either of the above shovels can be operated by steam or by electricity.

Balancing Shovel Capacities

In order to illustrate the amount of work that can be performed by the above types of shovels, the following table is prepared, assuming that 1 cu.yd. of coal in the bed weighs approximately 1 ton, and making no allowances for intrusions such as horsebacks and the like. The output (place measure), in cubic yards, divided by the depth of overburden in yards, gives the number of square yards of surface which the shovel uncovers, on top of the coal. Spoil area is figured on 20 per cent swell for loose material. Assuming that the bed is 4 ft. thick, giving 1⅓ tons of coal under each square yard of surface uncovered, we have the following figures for stripping:

Depth of Stripping, Ft.	Width of Cut, Ft.	Length of Cut, Ft.	Approximate No. of Cu.Yd. of Overburden	Sq.Yd. Uncovered	Approximate No. Tons Coal Uncovered
49	60	56	6,094	373	497
35	82	48	5,102	437	583
30	89	50	4,950	494	658
25	95	56	4,928	591	788
20	101	65	4,875	729	972
15	115	76	4,855	971	1,295
10	118	110	4,800	1,442	1,922

One acre of 4 ft. coal will yield about 6,560 tons of coal, or one foot acre, will yield 1,640 tons, more or less, dependent upon the specific gravity of the coal. However, in stripping, 10 per cent loss should be allowed for mining and loading. It will be noted by reference to the above table, that when the depth of stripping is 25 ft. the big shovel will only uncover approximately 788 tons of coal in a day of 9 hr. The capacity of the small loading shovel, on the other hand, is 1,350 tons per day. Consequently, the stripping shovel would have to work double shift in order to keep ahead of the loading shovel, provided the car supply was good and no loss in loading was encountered.

Aside from the shovel tracks, if standard railroad gondolas are run direct into the pit, it is advisable to use 70 lb. rails, of course laid to standard gage. One or two locomotives for shifting would also be required as well as one flat car.

Should it be decided to haul the coal to a tipple and prepare it, instead of loading run-of-mine direct into gondolas, a different type of equipment would be used in the pit as well as lighter rails, and a narrower track gage. In addition to the pit equipment and tipple, there will in any case be railroad sidings to be provided. In some cases also there must be houses and shops, a pump house and pipe line. The use of 2½-in. to 3-in. pipe about a stripping plant will generally provide the amount of water required.

The following is a brief summary of the labor employed about a stripping plant of large capacity, where the coal is prepared and put through a tipple. The scale of wages is omitted.

Stripping Shovel:—One shovel engineer, one fireman, one oiler, one craneman, four men in the pit, one coaler.

Coal Shovel:—One shovel engineer, one fireman, two men at dipper, one man cleaning up spillage, one driller and blaster, three men cleaning off slate and dirt.

Haulage:—Two locomotive engineers, two trip riders.

Tipple Help:—One tipple boss, one tipple boss helper, one boss trimmer, two assistants, one car dropper and one laborer.

General:—One blacksmith, one general repairman, one day boss, one time-keeper and clerk, one watchman, one superintendent.

The total pay-roll therefore amounts to 35 men for operating the plant. From the above force, because of delays from various causes, men can be provided for track maintenance about the tipple and plant. The daily cost for supplies and materials cannot be estimated accurately, but will include the following items:

Coal for boilers and engines, about 20 tons per day; oil, waste and packing; repairs and upkeep; depreciation of equipment and incidentals.

Summation of Expenses

The total of wages and salaries paid on the above labor account, plus the supply account, plus a suitable margin for interest, depreciation, insurance, taxes and expense of administration, will give the daily cost of operation. This divided by the number of tons of output per day, say 1,000, will give the cost per ton of production, f.o.b. cars. To this must, however, be added a certain amount per ton for extinguishment or a reduction of the initial investment in the project. Subtracting this total from the market price leaves the net profit per ton.

Development of any appreciable strip-pit area requires a big investment in shovels, railroad track, tipple and other equipment. Making such an operation profitable depends much upon the ability of the management and the efficiency of the shovel operator. The best talent available is here almost cheap at any price.

An installation to develop an appreciable area of stripping territory, using a large type of stripping shovel and a small loading shovel, figuring on a mile switch to the property, side hill cuts and fills, and including rail and other track materials, tipple construction, engines, sidings, cars, houses and shops, pump, pump-house and pipe line, and providing a surplus to start operation, would cost approximately $325,000 at the present time.

When less than 10 ft. of cover exists over a coal, it is generally discolored and soft. Sometimes even though the overburden is much more than the depth named, and even up to 30 ft., the coal is discolored, but is not as a rule as soft as when under only 10 ft. or less of cover. Such coal is stripped at small expense, but is not the equal of coal found under heavier cover.

When cover heavier than about 10 ft. is encountered it is not generally so discolored or soft as to compel its being placed on the market at a lower price than coal produced by underground mining methods.

Coal Surface Should Be Thoroughly Cleaned

When the overburden has been removed, the top of the coal bed should be thoroughly cleaned in advance of the loading shovel. The dirt can be swept off with a wire broom, and by thus exercising care, the overburden does not mix with the coal. Equal precaution should be taken to prevent any of the bottom becoming mixed with the product.

As the product of the strip pit is generally sold in competition with coal produced by underground mining and which has gone over picking tables and been screened and sized, equal precaution should be taken with stripped coal. The inferior material, occurring under lightest cover, can generally be disposed of locally for domestic use, at a price below the regular market. The prejudice of the trade against rusty coal is often not well founded, but notwithstanding that it may be practically as good as the unstained variety, the market is not willing to grant this as a fact.

In some districts stripping companies run their coal through the tipple, where it goes over a picking table and is screened and sized. Such plants uphold their reputation, but pits where "everything is loaded" only have a tendency to destroy the reputation of stripped coal.

No Bug Dust Is Formed

Stripped coal should have an advantage over that produced underground, inasmuch as there is no "bug dust" to be disposed of, since no undercut is made. Stripping is sometimes termed "daylight mining," and therefore the light should favor a closer inspection of the product so that impurities such as slate, binders, etc., may be cast out. With proper care in mining and treatment stripped coal will generally have an exceptionally good appearance when it reaches the market.

Before the installation and operation of a stripping plant is undertaken by inexperienced parties, a careful study should be made of the subject. It is important that plenty of drilling should be done in order to determine the character of overburden and thickness of coal, an accurate map should also be made of the territory showing the crop-line, buildings and roads, property lines, and the location of drill holes. At times it is desirable to have a good working map, and in this event the surface contours as well as those of the coal should be shown thereon. A map of this nature will enable one to make a layout of the necessary box cuts, and afford some idea as to the drainage problems encountered in the pit. However, a map of this sort is not always necessary as the solution of the drainage and other problems is often self evident.

In addition to the above, careful consideration should be given to the quality of the coal, and the location of any binders in the bed, the continuity of the bed, the hardness of the stratum forming the floor of the seam, as well as questions of transportation and marketing of the product, water supply, labor conditions, etc. It should also be borne in mind, that sufficient stripping territory must be available, so as to keep the equipment busy during its life, either upon the tract it is proposed to work or upon additional areas.

It is not ordinarily desirable to strip over an area that has been worked by underground mining, with the idea of recovering pillar coal. This should be considered as a separate proposition. For this reason, at times, it is not desirable to strip the outcrop coal about an old mine.

The success of stripping operations will depend largely on the shovel engineer and the ability of the superintendent, the genral management, close attention to details and systematic work. The very best men obtainable should be employed for the above positions.

Items in Coal-Mining Cost*

*Prepared by Oakdale Coal Co., Denver, Colo.

Stonega and Clinchfield Operations

By A. G. Lucas and F. E. Marcey
Mine Inspectors, Richmond, Va.

Owing to the shortage of orders the Stonega Coal & Coke Co. did not operate regularly last year. Yet, in spite of this handicap, it mined more coal than any other concern in the state. During the period of car shortage it continued to operate the major part of its mines by dumping the coal on stock yards prepared for this purpose. While this method is, of course, expensive since it necessitates reloading the coal into railroad cars, yet the company used this means of operating in order to keep the mines running, thereby keeping its working organization intact. It has had as much as 150,000 tons on the yards at one time.

This company has made many improvements this year, building two new camps and making many changes in the old ones. It has built three new tipples and started one new operation; a modern hospital has been constructed and a first-aid team equipped. The new operation is known as the Dunbar mine located on the Interstate R. R. in Wise County and promises to be one of the company's largest operations. With a few exceptions the mines of this company are equipped with electric-cutting machines and electric locomotives with about a dozen storage-battery locomotives. The mines are ventilated by up-to-date electric and steam fans housed in brick and cement buildings.

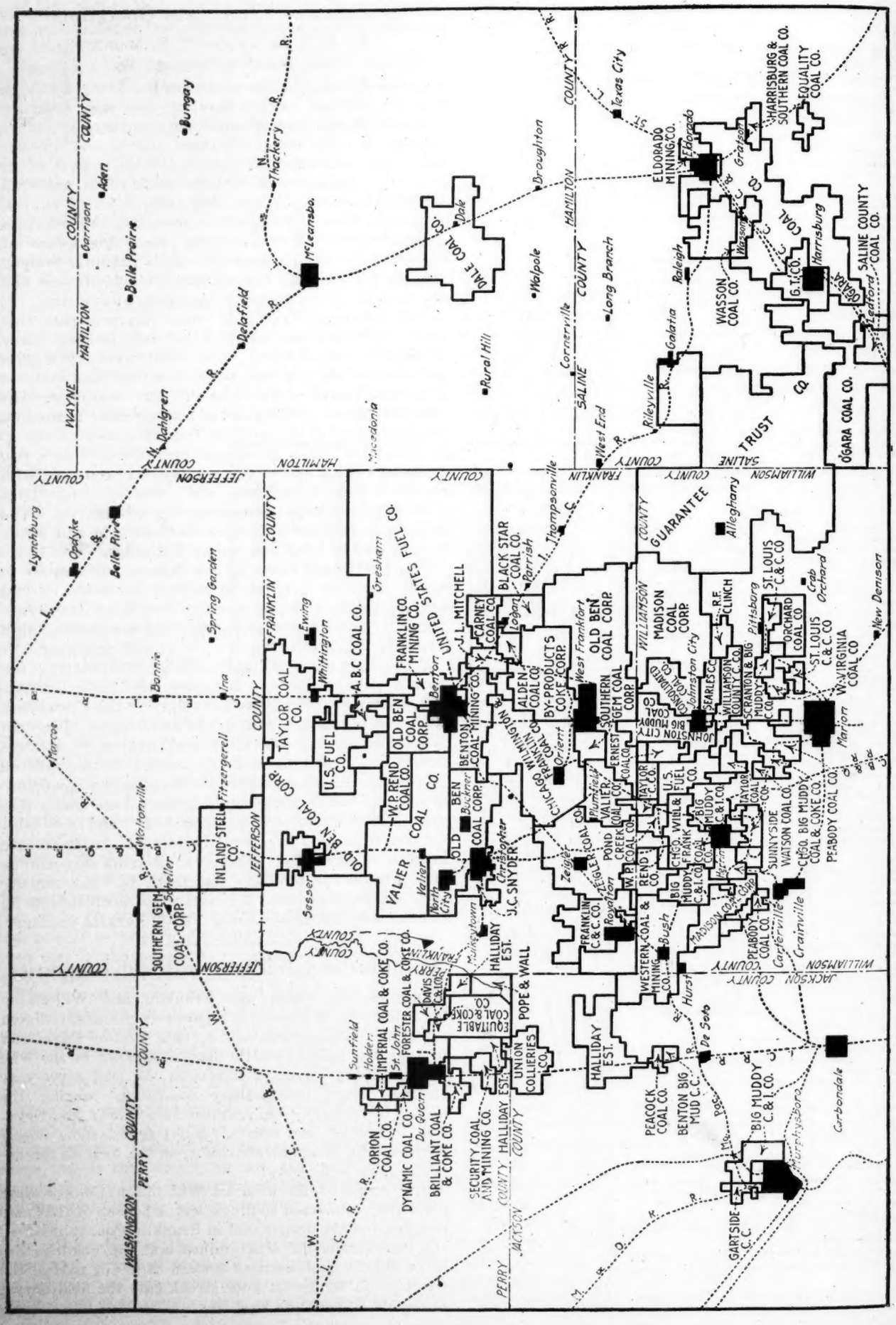
The efforts put forth by the company in respect to safety have done much to reduce accidents in and around the mines. It employs two mine inspectors regularly and its printed safety rules are rigid. Ralph Taggert, Big Stone Gap, Va., is general manager.

The mines of the Clinchfield Coal Corporation, the next largest producer in the state, are located in Russell, Dickinson, and Wise Counties, on the Clinchfield Ry. The mines are both drifts and slopes. The coal is cut by electric machines and hauled by electric locomotives. All the coal is brought to the railroad by conveyors. This company's camps are in good condition and many improvements have been made this year. The mines are ventilated by electric fans, incased in brick and cement buildings. An up-to-date hospital is located at Dante, Va. A mine inspector is employed and the efforts put forth by the company have no doubt reduced the number of accidents at its mines. Lee Long, of Dante, Va., is general manager.

Franklin and Williamson Field Properties

Only a few years ago Franklin and Williamson Counties were a waste of barnless farms and indigent citizens. The land was said to be a land of Egypt and by that was meant, not the land of Goshen in the Nile delta, but the Egypt as it was in the long seven-year famine. Even today there companies bearing the name "Egyptian"—the Egyptian Iron Works, the Egyptian Power Co. and others. But Egypt is now closely inhabited by prosperous citizens, as the map on the opposite page well shows.

The crops of the coal in Williamson County were divided up into small holdings, as the bottom of that map testifies, but the deeper coal in Franklin County involved the introduction of shaft mines and the holdings are large and the equipment as modern as in any part of the country. A somewhat poor streak cuts the field almost in two on an east and west line.



SOUTHERN ILLINOIS COAL FIELD, INCLUDING FRANKLIN, WILLIAMSON AND ADJACENT COUNTIES

Transportation as a Factor in Irregularity of Coal Mine Operation*

Heavy Expenditures by the Railroads Will Be Necessary if They Are to Meet the Needs of the Country—Much of the Necessary Financing May Have To Be Done by the Industries Served

By S. L. Yerkes
Birmingham, Ala.

An adequate supply of fuel and its proper distribution is the foundation of not only our prosperity, but that of the civilized world, and regardless of all other steps in the production of fuel, all will be of no avail without adequate transportation. I will not attempt to discuss any form of transportation except that by rail and the general principles underlying it as they affect the coal industry. At this particular time car shortage looms large and stands out predominently above all other troubles of the coal industry. For many weeks past a number of the large producing districts have not averaged above 50 per cent running time on account of car shortage. Car shortage is not new, but never in the history of the industry has a surplus of approximately 250,000 open-top cars available for coal loading been wiped out and changed to a shortage of approximately 75,000 cars in the short period of eight months, yet such are the facts today. On April 1, 1919, there was an approximate surplus of 250,000 open-top cars, while today a fair estimate of the shortage is 75,000 cars.

A marked deficiency in the available number of open-top cars, an insufficiency of power, the poor condition of existing rolling stock, a lack of main-line tracks, side tracks and passing tracks, and terminals as well as the absence of whole-hearted support and co-operation from employees are some of the present ills of American railways.

There is an additional shortage of open-top cars needed by industry for the transportation of structural iron and steel, gravel, stone, sand, concrete blocks, and other commodities and raw materials. This shortage is estimated at 100,000 cars today. Thus the present shortage of open-top cars is approximately 175,000.

This condition is extremely alarming and shows the necessity of prompt and strong action along many lines, if proper transportation is to be made available, not only for the coal industry but for all business of the country, and the prosperity of all, in final analysis, is dependent upon a proper and adequate supply of fuel.

The available coal-car supply of the country as taken from records of the Interstate Commerce Commission for the 16 years, 1904 to 1919, inclusive, for five-year periods, is as follows:

	1904	1909	1914	*1919
Number coal or open-top cars	622,568	792,291	893,314	975,000
Average capacity in tons	33	40	45	49
Total capacity in tons	20,760,045	31,748,304	40,583,490	47,775,000

*Estimated.
Increase in total capacity 1919 over 1904, 131 per cent.

The production of coal, anthracite and bituminous, for the same period was:

	1904	1909	1914	*1919
Anthracite	73,156,000	81,070,000	90,821,507	86,200,000
Bituminous	278,660,000	379,744,000	422,704,000	458,063,000
Total	351,816,000	460,814,000	513,525,000	544,263,000

*Increase 1919 over 1904, 55 per cent.

The five weeks' production of bituminous coal lost because of the October-November strike would have made bituminous production in round figures 500,000,000 tons for 1919, on which basis, the increase of 1919 over 1904 would have been 70 per cent.

The industrial slackness of the first six months of 1919 should be borne in mind as a large factor in the light output during the first half of the year. If the increase over 1904 is figured on the basis of the 1918 total production of 678,211,000 tons, the percentage of increase is 93 per cent.

During the same period that coal production increased as above shown, the output of other lines of industry requiring open-top cars increased at an equal or greater rate. From this it is evident that the need of the country for open-top cars in 1919 as compared with 1904 has not been met by an increase of 131 per cent in total open-top car capacity during the 16-year period named.

Transportation deficiencies existing today are not by any means confined to the shortage in the number of cars owned. Other factors of railroad transportation such as insufficiency of power, the poor condition of locomotives and cars, lack of adequate main tracks, passing tracks, terminals, absence of whole-hearted support of employees, due in great measure to former Director General McAdoo's labor-union policy, are large contributing elements.

The failure of the railroads during the last few years of private control, and of the government during federal control, to increase the facilities as the business needs of the country demanded, needs no discussion here, as the failures of the past are behind us. What we have to deal with today is the future.

We may or may not be satisfied with the forthcoming railroad legislation as provided by Congress, but certainly the revolving fund of $250,000,000, as proposed in the Esch bill, is totally inadequate to provide even

*Paper presented before the February meeting of the American Institute of Mining and Metallurgical Engineers.

in a small way for the immediate necessities of the railroads, and the outlook is not encouraging for securing capital through the ordinary methods of financial co-operation.

Conservative estimates by reliable authorities, place the equipment needs of the country today at 20,000 locomotives and 600,000 freight cars, delivery to be made over a period of three to four years. The above requirements are necessary to meet the business growth of the country and to replace retirements of obsolete and worn out equipment. The estimated cost of locomotives today is approximately $65,000, and of cars, approximately $3,000. Total cost of this equipment on the above basis is $3,100,000,000, in addition to which necessary capital for additions and betterments for tracks, terminals, shops, etc., must be provided.

I am advised by good authority that a bond issue by the government for the purpose of providing capital for railroad expenditures cannot and will not be considered, and as there is little hope of the railroads securing adequate capital from banking sources sufficient for their needs, the business interests of this country, in order to protect themselves, must, of necessity, assist in providing a large portion of the funds needed, particularly that portion essential to the purchase of equipment.

Of all business none is more vitally affected by car shortage than the coal industry, as of necessity, transportation must be available when coal is produced, storage at the mines being entirely impracticable except in a small measure and in isolated cases. Therefore, all business, and particularly the coal operator, should purchase, in such quantity as the resources of the various companies or individuals permit, equipment trust obligations of an individual railroad or group of railroads.

A Safe 6 Per Cent Investment

Railroad equipment trust obligations are considered an unusually safe and sound investment. A banking syndicate could be organized to finance the purchase of equipment for the various railroads, having first secured the pledge of the various lines of business interested, to purchase in such quantity as they decide they can properly absorb, equipment trust certificates when offered by the syndicate. In order to provide capital at a reasonable interest rate, such certificates should not carry a higher rate than 6 per cent, and while this capital might be employed in its own business at a larger profit, investment in equipment trust certificates for the purpose of providing additional facilities and thereby increased operating time for industry, could be well justified, and I urge consideration of this idea by the business and trade associations of the country.

Experts may differ with me as to the number of cars and locomotives needed, or concerning the additional facilities such as tracks, terminals, shops, etc., required, and can properly say that increased efficiency, and particularly the more intensive use of cars, the storage of coal and other things, to prevent cars from being used for warehousing purposes, even for as short a period as 48 hours, would solve the problem. Shippers, and the public alike, will agree in principle that a more intensive use of cars is reasonable, but at the same time will set up what are to them insurmountable difficulties as to why faster loading and unloading cannot be had. Today's situation is sufficient to justify community action against those in a locality who fail to do their part in the prompt loading and unloading of cars.

But I repeat, if the railroads themselves are unable through their own resources and credit to finance the purchase of necessary equipment, which need is now paramount to all others, the business interests involved, for self-preservation, must assist, and in my opinion this must be done, along the plan above outlined.

Just Distribution Has Been a Bone of Contention

A fair and just distribution of available coal-car equipment has been a big question of dispute throughout the years past. In the old days of favoritism the assignment of cars to favored producers was the outstanding evil in the distribution of available equipment, and in the purchase of railroad fuel, assigned cars played the leading role. All the tricks of the carriers in the old days used in the purchase of railroad fuel, and particularly in the preferential assignment of cars, were consolidated under one head, shortly after the beginning of government control in January, 1918, that head being the well known John Skelton Williams, director of purchases, U. S. Railroad Administration.

It is not necessary to review the evils resulting from using cars preferentially in the procurement of fuel. It suffices to say that the evils multiplied, as practice made perfect, and culminated finally in the fall of 1917, and through the winter of 1917-18, in the Fuel Administration requiring, because of war necessity, the railroads to assign cars for the loading of fuel required by certain industries producing the more needed munitions of war. By December, 1917, with federal control in sight, so many cars were being assigned for, particularly, railroad fuel and war munition plant loading, that the cars available for ordinary commercial distribution on many railroads were practically nil. Needless to say, this brought on industrial chaos.

Following the establishment of the Railroad Administration, the question of assigned cars became so serious, because of the great disturbance to business generally, to labor employed at those mines receiving no assigned cars, and particularly because of the announcement by the Railroad Administration, through its Director of Purchases, John Skelton Williams, that it proposed to use assigned cars for the purpose of securing a lower price for railroad fuel than the fixed government maximum, that representatives of the coal industry began a determined fight to abolish the assigned car evil.

Assignment of Cars Was Finally Abolished

This campaign was conducted by the National Coal Association whose position in the matter was espoused by the former U. S. Fuel Administrator, Dr. H. A. Garfield, who, broadly, intelligently, and courageously, recognized the rights of the public, the necessities of mine labor, and the needs of the coal operators. In final analysis the controversy was settled by President Wilson, who abolished assigned cars and at the same time ordered a reduction of 10c. per ton in the fixed government price for coal, both effective as of May 25, 1918.

Following the President's order abolishing assigned cars, conferences between the Railroad Administration and coal operators resulted in the establishment of uniform mine rating and car distribution rules. These rules, with slight modifications, have been in effect since

October, 1918, and have, in the main, tended greatly to stabilize the industry from the standpoint alike of the public, labor and the operators. The resultant good from equal car distribution for the benefit of the three parties at interest, the public, labor and the operators, is so apparent that there should be no return to assigned cars after March 1 next, but when this suggestion is made, immediately there arises the question of how the railroads will secure fuel in time of car shortage.

There has been much discussion on this subject and never more than during the year 1919. In October last, prior to the coal strike, the Railroad Administration, through its Director of Purchases, H. B. Spencer, asked a committee of operators to meet with him and discuss ways and means of providing railroad fuel, as he was having difficulty in securing his requirements. The underlying causes for the difficulty need not be discussed here, as it suffices to say the railroads were in need of coal and we all recognized the necessity of their having fuel. The committee of operators suggested to Mr. Spencer that in those districts from which he was unable to secure sufficient fuel for the needs of both originating and non-originating roads, if he would indicate the tonnage needed, the respective operators' associations would undertake to secure the necessary fuel for him and at reasonable market prices. It is interesting to note here that no demand, either before or since the strike, has ever been made to those assigned to carry out the understanding reached with Mr. Spencer.

The Interstate Commerce Commission under the new railroad bill should continue the mine rating and car distribution rules developed under Government control. Return of the roads to private ownership will probably mean improvement of conditions in the less-congested portions of the country, while in congested districts some of the Government practices should be continued.

With further reference to the matter of protecting railroads with coal in time of car shortage, my personal view, based on the assumption that the railroads will fairly and honestly contract for their fuel supply, is, that when delivery cannot be made of the contractual amounts because of car shortage, the deficit should be pro rated fairly to non-contract mines and shipped without question by the non-contract operators, except to such extent as it is necessary to exempt specialty coals, such as gas, byproduct, bunker, etc., with protection guaranteed by the railroad to the operator against damage for failure to ship on commercial contracts in hand carrying priority of shipment.

This action will supply the needs of the coal-originating roads and will avoid all the evils of promiscuous confiscation which will, of necessity, be resorted to by the railroads when their fuel supply runs short. For the non-originating coal roads, I feel, in case of failure to secure requirements through general purchase in the open market, appeal by such railroads to operators' associations located in the districts from which they normally draw their supply, will result in the securing of sufficient coal to protect the needs of such roads.

If co-operation from the operators along these lines is not given, with such modifications as local conditions demand, we may expect the vicious practice of indiscriminate confiscation with all of its resultant evils to the public and the industry to be continued. I therefore urge action at this time along these lines by the individual carriers and operators, and in so doing endeavor to forestall future controversies and resultant bad feeling on the part of the public, the railroads, and the coal producers, which inevitably arises from confiscation as usually practiced.

The plan suggested for the coal-originating roads is not of itself new, as a similar plan was used by the Fuel Administration in co-operation with the Railroad Administration during the winter of 1917-18 in order to provide the controlled lines with fuel. The plans above offered are suggested to meet the situation as it will arise under private operation after March 1 next.

A given railroad may feel that it can and should in times of shortage assign cars to its contract mines for coal in order to secure a lower price for its fuel. But when this is done such action must inevitably be followed by assigning its cars for loading fuel coal of connections, not in a position to protect contract loading with their own cars. Such practice eventually will cost the coal-originating line heavily, as sooner or later the entire car supply and transportation ability will be so used as to cut off largely, if not entirely, the supply of industrial fuel and result in closing many industries, which are large revenue producers to such carrier. This has happened on some roads and can happen again.

I see no objections in all fairness, to the placement of cars delivered for loading connecting-line fuel, at mines as billed, but connecting lines should not bunch their contracts so as to bring about full running time at such contract mines in time of car shortage with resultant disturbance to mine labor at other operations receiving a less car supply under the general distribution.

It is to be hoped that the Interstate Commerce Commission under the broadened powers given it in the new railroad bill, will continue in effect along the same general lines, the mine rating and car distribution rules developed during the period of government control, as these uniform rules are of great benefit to all interested.

Upon the return of the carriers to private ownership and direction we may expect, in my opinion, improvement over government control in many parts of the country, particularly in the less-congested portions. In the congested section undoubtedly some of the practices of unified operation under government direction should be continued, otherwise, I fear service under private control will not be as good as that under government control. In making this statement I wish to say that I am an ardent advocate of private ownership and operation.

In the return to private operation we must give consideration to the question of open-top car pools, about the wisdom of which there is wide divergence of opinion, not only among coal men, but among the carriers themselves. The big question of arbitrarily allotting cars of a strong well-managed road to a weak and poorly operated line as is frequently the case in car pool operation, is one worthy of discussion. It should be con-

sidered from the standpoint of the public, mine labor, and the industry and not from an individual, a selfish or sectional viewpoint.

Personally, I am an advocate of a national car pool operating through regional pools, with original regional allotment on ownership basis, and fair maintenance of interchange balances between the regional pools, allowing for fluctuations arising from extraordinary conditions and movement.

Finally, I feel that the coal industry should approach the railroad's return to private operation with an open mind, forgetting the evils of the past, hopeful that the carriers have profited by the lessons learned, and that they will honestly and faithfully play the game with each other and with the public. We have our part to perform and should do it in the same fair manner, and if all parties will acquit themselves like men our transportation troubles are on the way to a lasting solution.

To Conserve Coal for Future Generations*

True Conservation of Fuel Means 100 Per Cent Extraction, Complete Utilization and Maximum Efficiency in Consumption—Electrification Will Greatly Aid in This Problem

By Edwin Ludlow†
New York City

ANY discussion of the conservation of coal can be divided into three headings: (1) The conservation of the coal resources of the country through more complete extraction and better methods of mining; (2) the utilization of the entire output of the mine; (3) the obtaining of the maximum efficiency in the use of the fuel produced. 1. Mining methods in the United States have been, as we all know, extremely wasteful and are only beginning, in certain localities, to show any improvement. The great abundance and the low selling price of coal with the small margin of profit, if any, to the operating company made the task of keeping the company solvent the most important question, and to do so it was usually necessary to mine the cheapest coal at the least cost without much thought for the future. The increased demand and the higher prices that have recently come have made it possible now to work beds at a profit that formerly could not be mined except at a loss and it is now possible, in most fields, to work the veins in a property in the proper sequence, or from the top down, rather than according to the former method of working the big measures first and trusting that the roof would not cave and prevent the mining of the smaller veins lying above.

Owing to the abundance of coal and the low prices hitherto paid for it many impediments have been placed in the way of proper mining. The higher prices at present enjoyed make scientific operation at least possible.

The differences in the methods of mining and what we can learn from Europe in that regard possibly may be exemplified best by giving my own experience in northern France some years before the war. I visited a mine that was just being opened by a large French company. The machinery and equipment were of the very best that I had ever seen. Everything was not only absolutely fireproof but was built with a permanency and architectural finish that is noticeably absent from American mines. I noticed also, in looking over the plain where this mine was located, that other tipples were in comparatively close proximity on practically every side so I asked the chief engineer how it was possible to bring out at a profit the initial expenditure represented by the plant when the area to be worked was evidently rather limited in view of the proximity of the other shafts and tipples. He told me that the first vein that they would encounter would be at a depth of 1,200 ft. and that from there downward they would have a series of veins all the way to 2,500 ft. They would open up the bed at the 1,200-ft. level and by mining it longwall would make a complete extraction. They would not start the next vein below until the workings on the upper measure had advanced sufficiently to bring on a settlement of the roof, making it absolutely safe to open up the lower veins without any danger of affecting the workings above. These workings would all keep one behind the other and the output of that mine would be probably a continuous one for at least 100 years. It was, therefore, necessary to build not only permanently but as much in advance, in the way of machinery and equipment, as possible so that the plant would not become too far out of date and obsolete before the coal was extracted.

The work of conservation of coal in the ground by proper methods of mining is being much assisted now by the engineers employed by the large estates who lease ground to operating companies on a royalty basis. The leases are usually drawn so that the laying out of the work is in the hands of the landowner's engineer and strict rules are given in the lease as to the mining and the percentage of extraction. Great improvements have been made in mining methods but there is still room for much improvement in nearly all fields. To accomplish the complete extraction under the economic law that a mine must pay its expenses or close, makes conservation methods difficult of enforcement where the competition is as keen as it has been in the past.

In what was formerly Indian territory, now Oklahoma, the coal mines were taken over by the United States government, in 1895, as trustee for the Indian

*Paper presented before the February meeting of the American Institute of Mining and Metallurgical Engineers, New York City, entitled "Conservation of Coal."
†Consulting Engineer and Vice-President of the A. I. M. E.

tribes and this coal was leased to operating companies on a royalty basis, the royalty being credited to the Indian nation owning the land. However, conservation methods have not been practiced and the methods of mining used have been as wasteful, if not more so, in that field than in almost any other. Large areas were closed by squeezes, due to insufficient pillars left in the first mining, and the cheaper coal along the outcrop was extracted and the mine abandoned when it reached a depth requiring additional machinery. A large proportion of the field now consists of outcrop slopes standing full of water. No methods of mining were specified in the lease and no supervision was given to that feature.

An example of the difficulty of operating a coal mine under an act of Congress was exemplified here where a mine, at McAlester, Okla., having coke ovens and more slack than the coke ovens could use devised the scheme of making an intermediate size of nut and pea for which a market was found. In order to maintain that market, it was necessary to jig the nut and pea as otherwise it was too high in slate for the steam purposes for which it was well adapted. The slack coal was taken to a washery and the nut and pea cleaned in jigs and the fines taken to the coke ovens. The royalty was paid to the government on the shipments. This, however, was met with an immediate protest by the government, stating that the law required that the royalty should be paid on the coal extracted from the mine and that it would, therefore, be necessary to pay royalty on the slack before it was cleaned. The result was the abandoning of the washery and the shipment of the slack "as is," as the royalty charged on the slate taken out wiped out all possible profit.

Nearly All Anthracite Can Be Utilized

2. For the anthracite region, improvements have been made in grate bars and artificial draft that have enabled the utilization of the smaller grades until now the barley coal, which is being shipped, is made over a $\frac{1}{16}$-in. mesh. At many mines a still finer size is being made which passes through a $\frac{1}{16}$-in. and over a $\frac{1}{32}$-in. mesh. But in spite of these refinements a million or more tons a year of fine coal are being thrown away for which there are now being developed three methods of utilization.

a. Briquetting, which is gradually becoming more successful with various experiments, until now several briquetting plants are in operation and others are in contemplation.

b. Grinding this dust so that it will pass through a 400-mesh screen and burning it as pulverized fuel. Plants of this kind have been built at the mines and a plant is being erected in the cement region. Pulverized fuel has been used for some time with bituminous coal but it is only recently that developments have been made that make it practicable to burn anthracite in this form.

c. Utilization of this waste in the form of coke, which can be crushed down to stove-coal size and used for domestic purposes the same as the prepared sizes of anthracite. This process was invented by Donald Markle, who found that by adding pitch to the fine anthracite a good coke could be made in byproduct ovens. The process is now being developed by the Delaware & Hudson Co. under his direction.

In the soft-coal field, a waste product is the bone encountered in Westmoreland and other districts, where a large bench of this material is encountered in the vein and is thrown away as being too high in ash. It is capable of being used in a gas producer and a plant located at the mines could utilize this waste product in the generation of electricity, increasing the power supply of that section of the country.

Central Stations Accomplish Much

One of the greatest methods for stabilizing the coal industry and permitting the operation of the mines to their maximum capacity is by the installation of central electrical power plants. This can only be economically accomplished by the electrification of the railroads. The results, as given by W. S. Murray, who had charge of the electrification of the New York, New Haven & Hartford, have shown that passenger engines use twice as much fuel when coal fired as when operated electrically, and that for freight and switching engines the quantity is from three to four times as much. He also states that the repairs on electric locomotives are only one-half as much as on steam machines and they are capable of more continuous service and have better tractive effort.

The question of economy in the use of electric motive power on the railroads is no longer one of theory and the only obstacle to be overcome is the large initial expenditure required to make the change. The railroads now burn 28 per cent of the total output of the bituminous mines; with electrification this would be reduced to 10 or 12 per cent. Freight congestion and car supply troubles also would be solved, as the central power plants in the coal-producing states could be located at a group of mines, requiring only a minimum of switching service. Coal too high in sulphur for safe storage could then be burned as produced and the mines kept in continuous operation. For railroads not passing through coal fields, the power plants would require storage facilities to permit an accumulation of coal in the summer months.

Another extremely wasteful method of using coal is in the old-fashioned beehive coke ovens, that are gradually disappearing here; in Europe they were found too uneconomical to use 30 years ago. It has been estimated that enough gas goes to waste from this type of oven along the Pennsylvania R.R. to furnish the electric power needed for that railroad between Pittsburgh and Altoona.

Briquettes and Coke Augment Supply

In the anthracite field, the output of the mines in the Pennsylvania region has practically reached its maximum; and while the increase in population, especially in the seaboard states, is causing a constantly increasing demand for anthracite of domestic sizes, it will be impossible to increase that supply except by the use of briquets and crushed anthracite coke. The conservation that will have to be adopted by householders is to use the smaller sizes—such as pea and buckwheat for their heaters in place of the egg, stove, and nut—which they have formerly insisted upon buying. This is entirely possible by installing heaters adapted to the use of these small sizes, similar to the Spencer heater made in Scranton. The results have shown that the same efficiency per ton can be obtained from buckwheat as from nut or

stove. The firing is much more simple and the heater requires less attention as it is self-feeding; by a thermostat attachment it can be made self-regulating, thus requiring attendance only once a day to remove the ashes and replenish the feed hopper.

3. In the use of bituminous coal, there is the greatest extravagance in nearly all parts of the country and little attention has been paid to obtaining the full heating value of the fuel received. At a large plant I recently visited, the president pointed with pride to the fact that he always purchased the highest-grade coal and insisted that it should have at least 15,000 B.t.u.'s. I called his attention to the fact that his steam results showed that he was only obtaining 11,000 B.t.u. and by improving his boiler and closing up the leaks he could obtain the same amount of steam with an inferior coal or use a much less quantity of the higher grade. During the functioning of the Conservation Committee of the Engineering Council, this question was thoroughly discussed and if the coal shortage had continued it had been determined that there should be a complete survey made of the steam-using plants and that they would be rated by inspectors as A, B, and C. In class A would be the essential industries obtaining a maximum efficiency from their coal; these would be entitiled to preference in obtaining fuel. In class B would be the essential industries that were not burning the coal efficiently, their attention would be called to that fact. In class C would be the other industries which were either non-essential or were not burning coal to obtain the best results. Preference in shipments would be given in the order of A, B, and C. It was felt that there would be a great improvement throughout the country if the attention of the owners was called to the fact that they were liable to be refused coal unless they improved their boiler practice. We had gone to the extent of negotiating with the boiler insurance companies for the use of their inspectors to make these surveys.

Railroad electrification means large economy in the use of fuel. A linking up of big power plants through a high-tension large-capacity trunk transmission line would obviously accomplish still further savings in coal utilization.

Steam Locomotives Are Fuel Eaters

Another highly wasteful form of burning coal is in the steam locomotive. This subject was taken up by Eugene McAuliffe, who had charge of this matter for the U. S. Fuel Administration, and the reports of fuel conservation for the first nine months of 1919 are now available. They show that, in straight freight and passenger service, the roads reporting consumed 76,285,955 tons of coal, as compared with 88,727,045 tons in the corresponding period in 1918. The average cost of coal in 1919 approximated $3.45 per ton, and in 1918 $3.25—an increase for 1919 of less than 6 per cent. The most significant figures, of course, are not those relating to total consumption, which would be affected by the volume of traffic moved, but those bearing on unit performances.

These show that in 1919 there were 186.1 lb. of coal consumed per 1,000 gross freight ton-miles, as compared with 201.2 lb. in 1918. Consumption per passenger-train car-mile, in 1919, was 17.9 lb., while for the same nine months in 1918 it was 19.3 lb. In other words, the increased efficiency obtained per unit of service made the fuel cost per 1,000 gross ton-miles and per passenger-train car-mile less with the higher priced coal of 1919 than was true in 1918 when coal costs per ton were lower. When the difficulties in policing railroad efficiency systems in coal consumption, because of the nature of transportation service, are contrasted with the ease with which the similar regulation can be enforced in a stationary plant, the advantages that will accrue to the managers of the latter type from an intensive study of the question of how much service can be developed from a ton of coal are readily apparent. It has been shown how great an economy in coal consumption can be accomplished by electrification of the railroads; still greater fuel economy can be obtained by the use of electricity in manufactories. The estimated saving is nearly three-tenths since the losses in steam consumption of a plant running 8 hr. and maintaining its boiler plant for 24 hr. would be entirely obviated by the purchase of electric power and the payment for only such energy as was actually consumed.

Attention has been called to this subject by Secretary of the Interior Lane and it has been suggested that an appropriation be made for the study of a high-power trunk line between Boston and Washington, into which would be fed the power generated, as far as possible, first, hydro-electrically; second, from power plants at the coal mines, where they are within reasonable distance of this trunk line; and third by the construction of large power plants at tidewater, where coal could be brought in by both boat and rail. Here in the City of New York such a power plant is needed almost more urgently than anywhere else. Every strike of longshoremen or tugboat captains or a tieup from bad storms brings out big headlines that the coal situation in Manhattan Island is bad and that probably after a few days the subways and elevated roads will have to close down for want of fuel.

It is manifest that no large storage can be maintained on Manhattan Island with its limited area and high cost of land. The Newark meadows, however, can easily be reached by all the coal-carrying roads coming into the neighborhood of New York, and also can be reached by boats from Norfolk or Baltimore. A central power plant erected there could have an unlimited storage, under water, if desired, for the soft coal that is in danger of spontaneous combustion, and coal could be brought in at a minimum of expense, unloaded on these storage piles, and a sufficient reserve to tide over any possible storm or tieup could always be maintained.

High-power trunk lines connecting this power plant to the present generating plants of the Edison, Interborough, and Brooklyn Rapid Transit and other large electric consumers would change those plants to substations for the high-tension power coming in from the central plant and the present boiler plants could be used in emergencies. Such a central power plant could be expanded to sell electric power to the railroads entering New York and all the advantages of an

enormous concentration with the highest technical advice and the greatest efficiency could be well afforded at a plant of that kind, which would be a model for the country.

New York's troubles in heat and light, to a large extent, would be eliminated by having a power plant of sufficient capacity to take care of all of its needs and with storage piles to enable it to operate every day in the year irrespective of any local troubles affecting harbor transportation, which now is such an important factor in the fuel supply of New York City. With the successful operaton of this power plant, others could be built at Baltimore, Philadelphia, Boston and Providence and by connecting them with a main trunk line, intermediate industries would receive their electric power at a minimum cost.

While the initial expenditure for such plants would be high, the saving of $100,000,000 a year, which has been estimated as the amount that such a trunk line could save to the industries along the Atlantic coast, would well repay the interest on the investment required.

Pennsylvania Will Provide More Electrical Safeguards

Manufacturers Will Supply, and Operators Will Pay For, New Appliances To Make Storage-Battery Locomotives Safe in Gaseous Mines—New Laws Are Needed

BY FRANK HALL*
Harrisburg, Pa.

AT THE Capitol in Harrisburg a conference was held Jan. 27, to discuss electrical equipment in coal mines from the standpoint of safety to the employees which was continued at the same place Feb. 10. Most of the state and Federal officials, coal operators and manufacturers of electrical equipment who were present at the first session also attended the second.

The chief of the Department of Mines in opening the meeting said that at the previous session there was not a single dissenting opinion to the statement made by the department that storage-battery locomotives as now constructed are not safe for use in gaseous mines. Copies of the report of the commission of mine inspectors appointed by the chief of the Department of Mines to investigate this matter, were furnished those who attended the first session, together with copies of schedule 15, containing specifications of the U. S. Bureau of Mines as to what would constitute a safe storage-battery locomotive such as could be approved by the Federal bureau.

The manufacturers of storage-battery locomotives were asked to state what they could and would do to improve and perfect the machines in accordance with the requirements of the state and Federal authorities, and there was a general agreement on the part of the manufacturers to build the future machines according to specifications. These, however, will not be completed for some time. The question then arose as to what the manufacturers and operators would do in order to make the locomotives safe which are now in use in the mines, of which there are almost 300. It was shown that it would cost probably $400 to $600 to add the necessary safety features to the ordinary storage-battery locomotive, but this the operators expressed a perfect willingness to pay.

Having reached this point in the discussion, the question arose as to the attitude of the State Department of Mines regarding the equipment of this kind now in use, and the chief of the department assured the operators that it was not the intention of the department to be arbitrary in the matter, or to place hardships or undue restrictions upon them during the period in which the locomotives are to be improved to meet the requirements of the law. He stated that they, of course, realized the obligation that rested upon the department to safeguard the great army of workers employed in the mines, but he thought that proper consideration would be given this side of the question without placing too great a burden upon the operators or manufacturers. The unfortunate feature of this matter and the one that is causing trouble today is the deficiency in the mine laws of the state regulating electrical equipment.

In the anthracite region the act of 1891 is still operative, and it contains no mention of electricity. The bituminous mine code, passed in 1911, was prepared with much care and effort, and at the time was sufficiently comprehensive to meet the demands. Electricity, however, progressed so rapidly and its application has become so generally used with machinery and equipment that was formerly operated by steam power, that the bituminous code is also now far behind the requirements. This being the case, certain rules must be adopted to tide over the interim between the present time and a time when a new electrical code can be enacted.

Electricity in the mines is now applied to storage-battery locomotives, trolley locomotives, mining machines, pumps, chain hauls, drilling machines and fans. In fact in some of the best equipped mines, steam as a power has been entirely supplanted by electricity.

In carrying out the rules of the Department of Mines, the questions that arise in individual cases will be left to the district inspectors to solve and settle as fairly and justly as possible, keeping in view, of course, the main idea of safety to the employees in the mines.

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Exit the Coal Pool?

A Composite Interview Reporting the Comments and Ideas of a Number of Prominent People Who Are Thinking and Talking about the Pooling of Coal and the Future Prospects of This System in Handling Our Tidewater Coal Shipments

BY A STAFF CONTRIBUTOR

WITH the end of the Federal control of the railways in sight there are many questions before us as to what is going to happen to the various activities in which our National Government has been engaged while directing these transportation systems. One such point of great interest to every coal man is the question of what will become of the system organized for pooling coal at Tidewater, which has received such a large measure of support by the consolidated railroad activities. Just now, therefore, it seems particularly timely to stop and consider the various interests which have been affected by this pooling and just what their desires seem to be at the present time. Of course, within any one of these groups of interest, there are many shades of opinion, but *Coal Age* has undertaken to analyze the situation briefly and summarize just how each group in general feels about this important matter. The first effort made to effect the pooling of coal shipped to Tidewater was a purely voluntary one made for the purpose of handling bunker coal and foreign shipments with cooperation and efficiency. This first effort of the war period was later put into more general effect because of the interest of the Fuel Administration in these matters and particularly by reason of the large increase in the rates for coal-car demurrage established during the war when the car shortage was most acute. About a year ago the war-time form of this activity was modified somewhat, and membership became voluntary, but the railroads still continue to take the larger part in the support and operations of the Tidewater Coal Exchange.

For Pooling—Why the Railroads Favor It

1. **Less car switching.**
2. **Less car delay at pools.**
3. **More working time and larger earnings per car.**
4. **Larger coal-handling capacity with present trackage, docks, and motive power at tidewater.**

What the Wholesaler Gains

1. **Reduced car demurrage.**
2. **Reduced boat demurrage.**
3. **Greater opportunity to enter export trade.**
4. **Increased chance to speculate in tidewater coal without large risk for investment.**

Altogether, five distinct groups of interests have concerned themselves with pooling problems. The large producers of coal together with such of the smaller producers as maintain their own sales organizations can be considered a group separate from those smaller operators who handle most of their shipments through jobbers. A third group is made up of jobbers and wholesalers. Their trade is largely based upon purchases from the smaller producers or from those who do not attempt to maintain sales organizations.

All the railroads handling the Tidewater coal are, of course, actively concerned and they form the fourth major interest affected. The fifth group consists of the purchasers and users of Tidewater coal; this group includes the shipping interests doing coastwise and export business, users of coal in New England and other territory supplied by coastwise trade, and foreign purchasers of United States fuel.

In this classification the Tidewater Coal Exchange itself has not been considered, for it represents merely an agency by which these various interests have cooperated and it is not in itself distinct from them.

In general it can be said that everyone, at least in theory, favors some system of pooling: but with this agreement as to the theoretical advantage, any harmony in ideas as to what should be done ceases and we find many diversified and conflicting opinions. The small producers, the wholesalers, and the railroads in general, favor the pooling of coal. As a rule, however, the large producers and many of the users do not seem to be in favor of it. It is worth while to analyze carefully the reasons given on both sides of this argument.

The railroads handling large quantities of coal to Tidewater have, in a number of instances, strongly favored pooling. It accomplishes many savings to them by reducing the amount of switching at Tidewater, by reducing the car delay at the pool, and by enabling them to handle larger coal shipments with a given amount of track, dock and motive power.

It is obvious that if a railroad has a dozen shippers supplying altogether twenty or thirty kinds of coal it must sort out this coal not only to separate the different sizes and grades, but also to divide it according to ownership. A much larger amount of work is thus required in switching at Tidewater, than if all the coal of any one size and quality could be put together without regard to rights of possession.

With pooling all who have credits in a given kind of coal could draw upon the stock regardless of whether it is their own shipment or that of someone else. This advantage is the same as that exercised by the banker who enters deposits to the credit of the individual who makes them, but, of course, makes no effort to retain the particular coin or currency deposited by that individual for the payment of his checks when presented.

The fact that all shippers of any particular class of coal draw upon the common stock of this class for loading a vessel which they contract to supply gives large flexibility in operation and greatly reduces the car delays at the Tidewater yards, thus the railroad is relieved of much of the burden of demurrage and delay and thus has its cars available for useful transportation work. The income per car in any given length of time is, of course, thereby correspondingly increased.

Attendant upon the lesser switching and reduced complication at the seaboard coal yards is, of course,

the great advantage to the railroad that the given trackage, dock, and motive-power capacity can be used much more efficiently. Thus the income-producing power of this investment also is greatly augmented.

In view of these important advantages it is not strange that a number of the railroads have strongly favored the pooling system and can be expected to urge its continuance in some suitable form for the future. However, certain of the roads whose coal patronage lies principally among the larger producers are reputed not to favor this policy simply because their patrons do not favor it. In fact, it offers no particular advantage to them since the coal operators on their lines are each alone able to accomplish most of the advantages of pooling without certain complications which any such co-operative effort involves. Although, of course, in any group one would not expect to find opinion entirely unanimous, the sentiment among the wholesalers seems strongly in favor of some form of coal pooling at the seaboard. With pools in operation, the wholesaler finds several large advantages. 1. He can store coal through his credits in the pool without incurring large charges for car demurrage. 2. He can by careful planning escape boat demurrages that would otherwise be incurred while assembling a sufficient quantity of coal to make up his cargo. 3. He can use the pool as a means for entering export trade, from which he might otherwise be cut off entirely because of the larger risk and frequently higher cost, when demurrage on cars and boats enters as a large factor. And lastly, a point which is of especial interest to the small jobber, he can enter in this export coal trade in a speculative manner without requiring any large investment.

Against Pooling—Difficulties Suggested by Large Producers and Users

1. **Quality of the better coals suffer.**
2. **No reliable system of classification is available.**
3. **Adequate control of quality is impracticable.**
4. **A coal loses its identity in the pool.**
5. **Valuable trade name and reputation is lost.**
6. **Wholesalers and small producers are too active in export trade, to the detriment of all interests.**
7. **Pool makes export trade too largely speculative.**
8. **Permanence of export trade is endangered.**
9. **Pool is entering wedge for Federal activity and control of the coal business.**

This opportunity to enter the speculative export trade as it may be termed, is one that has particularly attracted a certain class of jobbers, who are characterized by some as "maintaining their office under their own hat." Such a one can arrange to ship coal to the pool without danger of incurring charges for car delay and can hold it there from periods favorable to purchase to later periods particularly advantageous for sale, with the added opportunity of slightly overdrawing his coal account in the pool, or perhaps more frequently making quick purchases through the pool, in case he finds a particularly attractive market. Such a one naturally favors this co-operative scheme. On the other hand, these very advantages to a certain class of jobber afford the basis of complaint which is mentioned below.

Small Operators' Problem

As a group the small operators do not hold a single opinion. Some favor the pool, others oppose it. Those who would like to see it continued, favor it because of the same factors as influence the wholesaler or jobber in his approval. It affords, especially, to the small operator, an opportunity to enter the export trade and sell at prices which at present compare very favorably with those prevailing in domestic business. He is able to do this through the jobber or even working directly through the pool, whereas he could not possibly "go it alone" in this field.

To this type of operator there is the great advantage of stabilized prices which he can get for dock deliveries and the assurance that he cannot be squeezed by the wholesaler at a time of little demand for coal at this point. This latter fact is particularly true as it affects the car-demurrage charges, which he would otherwise incur if he held his shipments until the time when he could secure a more favorable price. He could not afford to do this if working absolutely alone, but through the pool he is often able to avoid the necessity of disposing of his shipments at the unduly low prices caused by temporary lack of demand.

Just at the present time, with almost famine conditions in the coal trade abroad, practically any means for handling coal overseas is accepted without much question as to the quality of the product which will be made available. However, this condition will not continue and the discriminating purchaser is expected to dominate the market again.

When this time comes, the benefit of the good name of men who have operated conservatively will be of large advantage in the market of export and bunker fuel. The small producer realizing this is anxious to have his coal associated by classification with the product from the mines of good name and large reputation. This is a laudable ambition, of course, but at once it is seen that there are two sides to the question. And right here is where the difference of opinion between large and small producers enters.

So far I have discussed the favorable aspects of pooling as they are seen by many of the small operators. But, there are certain members of this group that find apparently good ground for opposition to any system of classification and co-operation such as has been worked through the coal exchange. Certain cases of complaint have arisen on the ground of discrimination in the allocation of the coal to various pools. Especially this has been a matter of complaint where the coal has been assigned to pools commanding a lower price than others in which the producer thought or claimed his coal belonged.

If by any reason the output of a certain mine be in pool X, which for sake of argument let us assume commands 25c. per ton less than pool Y, then the producer of this coal is at once confronted by the fact that his output everywhere in the market is likely to be regarded as at least 25c. less valuable than the coals which are classed in the other pool. For certain uses this differential of 25c. may be entirely fair, but with other equipment or for other uses it may be that the coal of pool X is substantially if not quite as valuable as that in Y. However, it is extremely difficult for the producer of the coal assigned to the pool of

lower price to convince a purchaser of this fact.

Of course, it is not essential to assume for the future any more than in the past that a particular price differential need be maintained between the several pools, as for example X and Y above assumed. But the very fact that there is some classification setting a distinction between the product of different mines is a point that troubles many of the small operators and incidentally perhaps some of the larger ones, too. In any event, this appears to be a ground for decided opposition on the part of many coal producers. In general the large producer does not desire a continuance of the pooling system. In such a program his coal loses its identity; in other words, he cannot sell effectively under his own trade name. This represents a genuine loss to him, for the "good-will" involved in his trade name is worth much to him. In fact, it actually represents a large financial investment which he made while he was building up his reputation and record for quality.

In the second place, the producer of high-quality coal is likely to suffer for the sins of others when his coal enters a pool to which other producers are also admitted. The basis of the assignment to this pool is, theoretically, that all are of the same quality; but there is no definite standard for judgment nor accurate system of control. Hence, inevitably producers of better-quality material have lost somewhat.

IF BANKING WERE DONE THUS WHERE WOULD MORGAN BE?

The "advantage" of coal pooling "is the same as that exercised by the banker who enters deposits to the credit of the individual who makes them, but, of course, makes no effort to return the particular coin or currency deposited by that individual for the payment of his checks when presented."

This loss in reputation and the actual depreciation in quality are two factors which strike fear into the heart of any operator who looks forward to permanency of foreign coal trade. The reputation of American coals can be made and maintained on the highest plane, but unless the quality is carefully guarded (and under pooling this seems to be an almost impossible task), the large producer justifiably fears that our reputation will become even worse than it now is in certain quarters.

The large operator by his very bigness is at an advantage in export operations, but when a pooling system is established he is at that moment confronted with a large number of jobbers and small operators who through the pool can enter actively and more or less effectively into competition with him for this foreign trade. Moreover, with these interests in the field, the speculative element and the uncertainty of operations increases quite to the disadvantage of the larger interests.

Then, too, the very fact that any such co-operative effort as this involves national effort or perhaps Federal co-operation is a ground for fear in the mind of some persons. Anything which savors of Federal activity is unwelcome; in fact, it is almost terrifying just now. Federal ownership and Federal control are in the minds of many only the extreme forms of this sort of activity and anything which seems like federalized effort is, therefore, taboo.

Interests of Purchasers Are Divided

The purchasers are divided in their interest. As a means of getting prompt delivery and to some extent of eliminating variable prices as a factor in seaboard-coal deliveries, pooling of coal is favored. On the other hand, the discriminating purchasers who realize the great advantage of certainty in quality and characteristics do not wish to deal with any system from which they cannot get sufficient guarantees as to the quality of the coal which they are purchasing! Where a man has been dealing with a large producer and has obtained good results from the coal and a square deal as to prices and deliveries, he certainly does not wish this satisfactory arrangement to be interrupted by any scheme which places him at the mercy of a dozen or more producers with whom he is not acquainted and whose responsibility he, to say the least, questions. On the other hand, there is the speculative element among the purchasers which favors the pooling system for the same reason that speculative jobbers desire it. This group, however, seems to be in the minority.

So long as visual inspection is the only system of coal-quality control, it is doubtful whether it is really practicable to classify coal deliveries at seaboard accurately enough to fully eliminate the serious consequences brought out above. Up to the present time, the means by which the product of certain mines was assigned to certain pools has not been all that everyone could wish.

All sorts of charges of favoritism and discrimination have been made; but without entering into this question at all, it is evident that a system based on such limited knowledge of coal quality as is generally available will not be adequate to care for the problem when hundreds of shippers are all desirous of securing the best possible assignment for their output.

There is no question that there has been some justification for the charges that the quality of coal delivered has not been what it ought to have been. On the other hand, certain gross exaggerations of "poor quality" have been made. Those who argue that this system of pooling can be made entirely successful find support for their argument in the system whereby our naval authorities select "navy" coal.

However, it should be recognized that no such care has been exercised, in fact no time was available for

the exercise of such care in the assigning coal to the pools whereas there has always been due care used in selecting coal for the navy. If the same skill and care had been shown, there probably would have been little ground for the objection made on the score of the variability in quality, which thus far has been, at least to some extent, justified.

In any consideration of the quality of coal which is delivered through a pool, one should not forget that there is something of like character in any event, that is the borrowing of coal in order to make up cargoes and fill contracts. However, this practice affects only a small percentage of the coal handled and practically concerns only the man or men who practice this borrowing; hence a purchaser has a direct "come-back" on the man who, because of this practice, delivers a different quality from that he has contracted to supply. Thus borrowing affects quality much less than pooling and the practice of borrowing poor coal to fill a cargo is much easier to control. How to classify coal is much too large a problem to discuss here. It is only neessary to point out that no single characteristic is at all adequate as a basis of classification.

Plan of the Wholesalers

A large number of wholesale and jobbing interests are considering a reorganization of the coal exchange in the near future and it is their hope that they will be able to continue this work and realize for their department of the coal business the large advantages which have been pointed out above.

It is possible that a pool continued in this way may be of considerable profit to this group of interests and if they are successful in planning their system of classification the opportunity for a limited success may be considerable. It is doubtful, however, whether support will be given by the larger producing interests and under these circumstances it is sure that no pool of all embracing magnitude is to be expected.

What Shall We Do?

There is no doubt, as stated at the outset, that the theoretical arguments in favor of pooling are great; and moreover, there are certain large practical advantages to many interests. However, the principle of sound merchandising recognizes that quality and service must go with the right price to make up satisfactory permanent trade relations.

At the present time, the practical difficulties of securing assured good quality and of controlling this quality at all times for all deliveries seem unsurmountable. It does not seem, therefore, to be a prophecy but rather a bare statement of existing fact, that we cannot expect coal pooling to continue to be a success with the present means adopted for the classification and the control of quality, except perhaps in the service of small parts of the coal trade operating as the jobbing interests propose to do.

Conference Seeks To Cure All Mine Ills—II

McAuliffe Advocates That the Seasonal Differential Be 30 Per Cent—Rice Presents Advantages of a Coal Syndicate—Saint Declares That Export Business, If Not Conducted with Caution, May Be Forbidden

By R. Dawson Hall

IN THE animated discussion that followed his paper on "Stabilizing the Market" read before the American Institute of Mining and Metallurgical Engineers on Wednesday, Feb. 18, Eugene McAuliffe, general manager of the Kathleen Colliery, declared that he had proposed an increase in the winter freight rate of 15 per cent and a reduction in the summer freight rate of 15 per cent, the period of the lower rate being from March 1 to Aug. 31. In comment it might be permissible to say that a variation of any given percentage would put certain sections out of certain markets in the winter and into certain markets in the summer. A reduction of 15 per cent in the summer would make it advantageous in some sections to buy West Virginia as against Illinois coals, whereas an increase of 15 per cent in the winter would give Illinois coals the advantage. In certain parts of the country this would not occur, but in some a flat difference in rates would be fairer than a percentage. The rates being uniform over six months would tend to lump buying at the end of the summer period. The anthracite rule of monthly variations seems preferable to that which Mr. McAuliffe has proposed.

The article by Edwin Ludlow, on "Conservation," followed, and it created much interest. In reference to what Mr. Ludlow said relative to the waste of coal, especially in Indian territory on leases under control of the United States Government, where the property was owned by the Indian tribes, George S. Rice declared that the Bureau of Mines had nothing to do with the writing of these leases, and, therefore, could not be blamed for what coal was wasted, the leasing being done before the Bureau was established. In justice to Mr. Ludlow it may be said that he did not charge the matter to the Bureau and the statement of Mr. Rice was solely to correct a possible misapprehension.

In the Alaska bill, which is now under consideration, the engineering provisions by which it is hoped to conserve the fuel of Alaska from wasteful exploitation had not been seriously objected to by those capitalists who are disposed to put their money into the development of the coal lands of that territory. The objections which have been made by would-be leasers have reference to matters not related to engineering.

Mr. Rice declared himself unfavorable to Government ownership, and said that in the Saar region of Germany, where 17,000,000 tons of coal are produced per year, 12,000,000 tons are produced by the state. He noted twelve shafts in a certain section of the Saar region which had been put down by the Prussian government and which produced an aggregate tonnage of 1,400 tons a day. The output of coal in these mines averaged 0.4

tons per man per shift. There seemed to be a delight in these mines to create elaborate engineering feats, regardless of whether the investment of capital was profitable or not.

Would Imitate Germany's Syndicate System

Mr. Rich advocated that as there were too many mines, a body like the Interstate Commerce Commission should be given the power to regulate the opening of new mines so as to prevent a development in excess of needs. In fact, Mr. Rice believes that it would be well if the United States imitated the syndicate system of Germany, the prices of coal being regulated by a commission so as to keep them within reason. He made the statement that the coal companies made money under the Fuel Administration, and that it was quite likely that a commission by the government for the continuous regulation of prices would be disposed to deal fairly with the coal operators.

Hugh Archbald spoke a few words relative to the matter of efficiency in the mines and urged that no success would be attained in this direction until mine foremen were given more assistance, for as it is now it was impossible for them to keep proper watch of the operation of the daymen and so regulate matters that a steady flow of cars would be afforded the miner. With the uncertain delivery of mine cars it was impossible for a miner to put out a maximum tonnage.

Mention has been made already of the remarks of Charles S. Allen relative to the honorable character and importance of the jobbing fraternity, in which statement he was amply justified, though he unfortunately overlooked the existence of a number of people who were coal jobbers only for a time and preyed on other industries when the coal business was less brisk and profits less promising. No one is more troubled by these temporary interlopers than is the all-the-year-round jobber. He said that a discussion had been taken up with the various chambers of commerce relative to differential freights between summer and winter and had found that these chambers had been favorable to such a variation.

New York Wholesalers Ask for Differential

He said that the New York Wholesale Coal Trade Association had directed him to bring a formal complaint before the Interstate Commerce Commission against the coal-carrying roads in the Eastern section of the country. Later it may be well to add other roads to those against whom complaint is being made. There was a general disposition to take up this matter with the roads on a voluntary basis, because there was no feeling of hostility toward them, and there was every desire to exhibit to them that the action was merely one of co-operation. However, it was thought that any action which had to be obtained voluntarily might take several years, and the Wholesale Coal Association wishing immediate action took these means to secure it.

H. Y. Saint, of the Shipping Board, then remarked that it would be necessary to fit our export trade into the domestic. The conservationists in America were quite strongly opposed in many cases to the export of coal, desiring it to be used entirely by the nation for its own development. There is a prospect that the export of coal may be forbidden, and it is likely, at least, that it will be regulated by Government enactment.

Consequently, it will be necessary for those who are engaged in the export business to go cautiously about their work for fear that they do not in their zeal and anxiety to increase their operations, embarrass the home market. At present the export trade is being done mostly in two or three fields, and that being the case, the large demand from abroad would make it impossible to secure that class of fuel for our domestic trade unless the consumers in this country are willing to pay the high prices which are often charged in the foreign trade.

Should the domestic corporations find they could not get coal from the fields where they had been buying it, or could obtain it only at unreasonable cost, as it might seem to them, they would be apt to call upon the public to put an end to the foreign trade which created their embarrassment. A very little buying will disturb the balance of a trade and cause prices to soar beyond all reason. This is particularly the case when purchases have been confined to a certain field and not spread over a sufficiently large coal-producing area.

More Ships Not Needed So Much As New Ports

In order to prevent our foreign trade from having this disastrous effect it will be necessary to increase the port facilities, both as to their size and location. It will be necessary also to rearrange railroad freight schedules so as to make a shift possible to some ports which are not now being used. In this way it may be hoped that large enough areas of the country may be developed for export trade so that it will not interfere with the regular conduct of the nation's business.

When Mr. Saint was asked how much coal could be dumped for off-shore business per month, he stated that some declared that 1½ million tons was the limit, and others even estimated that 2 million tons could be dumped. Asked whether this off-shore business included that of New England, he said he only referred to foreign trade. He thought that one million tons could assuredly be taken care of, but he questioned somewhat whether the estimates he had just quoted were within the mark. Under the "Permit System" 500,000 tons were shipped in January.

There are many people who are talking about the United States shipping from 30 to 40 million tons a year. Such an output is impossible with the present facilities. Mr. Saint said that one item in stabilization had been overlooked, and that was, that the provisions for bunkering foreign vessels furnished a storage capacity which assisted in keeping mines continuously in operation.

Mr. Ludlow, before adjournment, proposed that a committee be appointed by H. C. Hoover to investigate the present coal situation; that committee to consist of the Coal and Coke Committee of the Institute wih 15 other members, including coal operators, mine workers, the Government and the public. With the passage of this resolution the meeting adjourned.

The freight rates to northern European ports, he said, now ran at $22.50 a ton, whereas the freight rate to Mediterranean ports was $26.50. There is practically no return cargo, and that is what is making the shipment of coal so expensive. He said that the rates for the first ten days in January from Baltimore and Hampton Roads were within $1 of the Shipping Board rates. These rates were not excessive because it was necessary under present conditions to use boats that were not really suited to the work.

New Tidewater Pooling Associaton Formed

Tidewater Transshippers Association will Replace Tidewater Coal Exchange —Tonnage of New Association Already 5,000,000 and Will Probably Reach Twice That Figure

A MEETING was held at the Whitehall Club, Tuesday, Feb. 17, at 3 p. m. at which was formed the Tidewater Transshippers Association. C. Andrade, Jr., Esq., president of The Wholesale Coal Trade Association of New York, Inc., in the absence of Charles A. Owen, chairman of the Organization Committee, presided at the meeting.

The chairman stated that the purpose of the meeting was to adopt the plan for the formation of the Tidewater Transshippers Association and to approve the proposed by-laws and rules to govern the conduct of the same. Upon a request from the Chair for criticism of, or suggestions for changes in, the plans and rules proposed, Major Coyle, of Weston, Dodson & Co., suggested certain changes. Mr. Baker, the counsel for the association, explained the legal reasons for not adopting one of the suggestions made and as the remainder were matters having to do with the administrative functions of the Board of Directors, they were referred to that body for consideration.

Realizing that pooling of coal makes for economy, the Tidewater Transshippers' Association is formed. It will make a new classification of mines for pooling purposes. Steam coals will be classified under volatile matter, ash and sulphur, and gas coal under these headings, and on the gas yield and the illuminating power of the gas formed. Analysis of coal in the seam will not be made.

Large Number of Responsible Firms Present

The following members of the trade were present and represented:

Alden Coal Mining Co., Austen Coal and Coke Co., Bertha Coal Co., Big Bend Coal Mining Co., W. H. Bradford & Co., Clark Brothers Coal Mining Co., Coale & Co., Emerson & Morgan Coal Mining Corporation, Emmons Coal Mining Co., Eyre Fuel Co., Ft. Dearborn Coal & Export Co., Garfield & Proctor Coal Co., Gorman-Leonard Coal Co., Gauley Coal Mining Co., Hall Bros. & Co., Imperial Coal Corporation, Industrial Coal & Coke Corporation, Johnstown Coal and Coke Co., The Arch. McNeil & Sons Co., W. A. Marshall & Co., Matlack Coal & Iron Corporation, B. Nicoll & Co., E. Russell Norton, Pan Handle Coal Co., Punxsutawney Coal Mining Co., Pilling & Crane, Producers Fuel Co., Quemahoning Creek Coal Co., Thorne, Neale & Co., E. A. Ward & Co., J. S. Wentz & Co., Weston Dodson & Co., Shawnee Fuel Co., Wm. Cory-Mann George Corporation, Borden & Lovell, Williams Run Coal Co., Clearfield County Coal Co., Virginia Smokeless Coal Co., Wright-Gibson Co.

Mr. Thompson, of the Imperial Coal Corporation, raised the question of the desirability of continuing the name "The Tidewater Coal Exchange." The reason for adopting the new name was explained; first that it was more descriptive of the actual functions of the association, and second, that there would unquestionably be an overlapping of arrival of shipments at tidewater after the date of the official discontinuance of the old organization and the beginning of the new and if the old name were retained, would result in great confusion in the handling of the business of the new organization and might result in so handicapping it at the outset as to reflect seriously upon its future usefulness.

Mr. Thompson also proposed a form of boat bill of lading which should contain information of the pool numbers, etc., for the cargo. This was referred to the Board of Directors with a recommendation from the meeting for favorable consideration.

Mr. Marshall, of W. A. Marshall & Co., then presented a tentative set of principles for the classification of coal and basis for inspection, as follows:

First. The basis of classification shall be that set forth in Rule 6 of the rules of the Association:

Classification 6. All bituminous coal for transshipment at tidewater ports shall be graded and classified in designated pools by a Classified Committee appointed by and under the direction of the Executive Committee.

"The principles of classification shall be just, uniform and nondiscriminatory and it is to be the purpose to improve the classification of coals at all times, and matters of dissatisfaction with classification may be appealed, as provided for in the resolution of the Board of Directors appointing the Executive Committee, dated February*, 1920."

Second. Protection as to quality shall be that provided for in Rules 7 and 8 of the rules of the association:

"*Inspection*—7. The Commissioner and Deputy Commissioners shall at all times protect the quality of coal shipped to the association, through a system of inspection, and analysis, if necessary in their opinion, and they may at any time suspend shipments into any pool when, in their judgment, the quality or preparation of such coal is below the proper standard. Appeal from such action shall take the same course as in the matter of classification."

"*Rejections*—8. Cars containing coal which are, by the inspectors of the Association, rejected from any particular pool, shall be designated as "unclassified" and, upon notice mailed to the registered address of the member, shall be eliminated from the records of the Association. Responsibility for disposition of such coal shall revert, with all charges, from the day following date notice is so mailed, to the member for whose account the cars were shipped."

Third. Classification shall be made upon the basis of analysis for volatile, ash and sulphur, as to steam coals; volatile, ash and sulphur, yield of gas per pound and illuminating power, for gas coals, with such variations as shall be determined by the executive committee upon recommendations to it by the Classification Committee, such variations to be governed by such change in conditions as may arise from time to time making a change important or necessary.

Fourth. A preliminary classification shall be given a mine by the Classification Committee, following application, as provided in Rule 12 of the rules of the Association, based upon such general knowledge as

*Meeting not held before going to press.

may be had or can be made available on short notice. As soon thereafter as possible there shall be taken at least three samples of the coal, as commercially shipped from said mine, by a duly accredited inspector of the association, same to be taken in accordance with the principle set forth in "Bulletin 4" by E. G. Baily of Boston, Mass., entitled "How To Sample Coal and Coke."

"*Application for Classification*—12. The shipper of any coal not so classified may make application on forms Nos. 24 and 25, when prompt investigation will be made and the mine added to the classification by supplement and orders issued to allow the coal to go forward."

Fifth. The sample so taken shall be analyzed by a duly acceptable chemist to the association, in accordance with the principles of analysis set forth in Technical Paper 76 of the Bureau of Mines, entitled "Notes on the Sampling and Analysis of Coal."

Mine Shall Be Rated From Three Analyses

Sixth. The average analysis of the said three samples shall establish the basis for an adjustment in the classification of the said mine, and the preliminary classification shall, if necessary, be changed in accordance with the said finding.

Seventh. Further samples from said mine may be taken and analyzed, from time to time, either at the request of the operator or at the option of the Association, in the manner provided for above and the average of all analyses of the coal from said mine, taken officially by the Association, as heretofore provided, shall be used as the basis for correction, from time to time, of the classification, except that in the event that the coal shall show a marked change in quality from its previous standard special consideration will be given to such a mine by the classification committee and, after a thorough investigation, the Classification Committee shall have the right to immediately correct the classification of such coal.

Seam Analyses Are to Be Banned Hereafter

Eighth. Samples shall only be taken for the purpose of classification by an inspector who has been duly authorized by the Classification Committee and who shall have shown ability to sample satisfactorily in accordance with the principles set forth in Bulletin 4, by E. G. Baily, entitled, "How to Sample Coal and Coke." Sampling shall be restricted to the following: (a) Coal from any storage. (b) Coal fom cargo. (c) Coal from railroad cars. (d) Coal from mine cars. (e) From chute of tipple or from conveyors at any point. Seam sections will not be used for the basis of ultimate classification.

Ninth. Samples shall only be analyzed for the purpose of classification by chemists having the authority of the Classification Committee and who shall have shown ability to check within — per cent † in this work with a board of acceptable chemists, selected by the Classification Committee, who shall adopt rules conforming to the foregoing, to be followed for the purpose of creating uniform practice in order to gain uniform results in accordance with the aforementioned Technical Paper 76 of the Bureau of Mines, entitled "Notes on the Sampling and Analysis of Coal."

Upon motion, duly seconded, the foregoing tentative principles were adopted, only one vote in the negative being recorded.

Thereupon the Chair asked for an expression on the proposition of whether those present would become members of the Tidewater Transshippers Association, in accordance with the plans and rules submitted, and the following indicated their intention to become members and authorized the statement of tonnage to be annually shipped through the Association as set opposite their names:

Participants and Their Shipping Capacity

Shipper	Thousands of Tons Shipped
Dexter & Carpenter	1,000
Coale & Co	750
C. W. Hendley & Co	750
Chawnee Fuel Co	400
Bertha Coal Co	300
William Cory-Mann George Corporation	300
Matlack Coal & Iron Corporation	300
Weston Dodson & Co	300
W. A. Marshall & Co	250
Alden Coal Mining Co	200
A. W. Hillebrand Co	200
Anita Coal Mining Co. Punxsutawney Coal Mining Co. Williams Run Coal Co	150
Gauley Coal Mining Co	100
Clearfield County Coal Co	100
Emerson & Morgan Coal Mining Co	100
Hall Bros. & Co	90
Imperial Coal Corporation	50
	5,340

This does not cover all who were present because some who attended were not prepared to pledge their companies.

The following indicated the intention to become members but were not able to give tonnage figures:

Borden & Lovell, Wentz Co., Lewis Fuel Co., Inland Coal Co., Keystone Coal & Coke Co., Latrobe-Connellsville Coal & Coke Co., Mountain Coal Co., Argyle Coal Co., E. Russell Norton, Gorman-Leonard Coal Co., Garfield & Proctor Coal Co.

The total tonnage indicated at the meeting was 2,200,000 tons, and upon this basis, with the statement from Mr. Kirchner, of Hall Bros. & Co., of Baltimore, that many of the Baltimore transshippers would become members, and also upon the assurance of Mr. James, of the Pan Handle Coal Co., of Norfolk, Va., that the shippers at that port would probably desire to join the plan, upon motion, duly seconded, the Organization Committee was authorized to proceed with the plan and to perfect the organization and make it ready for business at the earliest possible moment. There being no further business before the meeting, it was adjourned, subject to the call of the Chair.

Deposit of $300 or Over From Each Member

Members will be required to pay on demand the actual cost of conducting the affairs of the association at each port on the basis of the tonnage shipped, that figure to be determined monthly and to be assessed by the Executive Committee, the dues including, however, a sufficient sum to meet the general overhead expenses of the association computed in like manner.

An initial deposit must be made pending the assessment and collection of dues, as above provided. It will not be regarded as dues but as working capital, the deposit being 1½c. per net ton on all tonnage handled by the member at Tidewater ports during 1919. The deposit shall not be less than $300, and shall be subject to revision Jan. 1 and July 1 of each year based on the member's shipments in the preceeding 12 months or at more frequent intervals as the Executive Committee shall provide.

The deposit will be returned on withdrawal from the association. Members must file a satisfactory bond or undertaking with the association to guarantee the credits extended from time to time and conditioned also on the handling of the coal by the member in conformity with rules and regulations of the administration.

†Percentage not yet determined.

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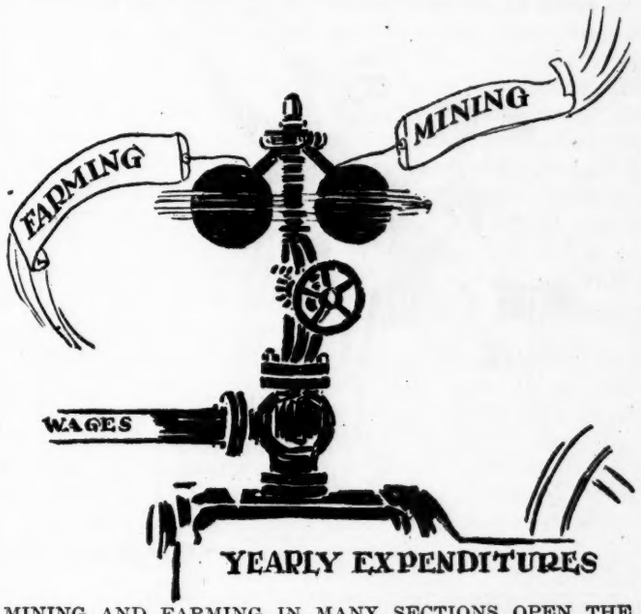
Mining Fatality Roll

DOUBTLESS the fatality roll in the mines is long enough and sad enough to fill us with self-searching regrets, but after all the United States reports of mortality from all causes make us realize why mine workers take the deaths from mine accidents with a large degree of resignation.

In 1918 the number of deaths per thousand in the United States as just published was 18.0, while the number of fatal accidents in the mines was 3.39 per thousand. Thus the general mortality is 5.31 times as great as the fatality risk in the mines. As there are probably five persons to every mine worker in every mining town the loss per inhabitant is only one-fifth as large, and there are probably twenty-five funerals due to natural causes to one due to a mine accident, even in towns that have absolutely no business but that of mining. In 1918, 1.523 persons died from organic diseases of the heart per thousand of population and 1.491 from tuberculosis. Hence the number per thousand of population who die from heart diseases and tuberculosis combined is about the same as the number per thousand of the mine workers who die from accident. No one wishes to do anything to hamper the steady development of the safety movement and certainly no one would regard with indifference the passing of such legislation as will make mines safer, but it is a mistake to regard the mining hazard which the mine worker alone faces as far overshadowing the health hazards to which everyone is exposed.

One Seasonal Occupation Assists the Other



MINING AND FARMING IN MANY SECTIONS OPEN THE VALVE FOR THE FLOW OF MONEY TO THE MINE WORKER'S PURSE

What Other Earnings Do Miners Make?

MUCH HAS been made by the miners appearing before the Federal Coal Commission of the fact that the mine workers were not able last year to secure employment more than 150, 200 or 225 days per year, the number of days varying in different districts. Naturally one does not expect the earnings of a man who is employed only 150 days a year to be as great as one who works 300 days. But it seems that those appearing before the Commission have altogether neglected to take into account the additional amount which these workers can secure from other employment and duties, when not engaged in the mine.

Providence certainly must have considered the welfare of the miner when it arranged that those fields where mining is practically the only occupation available to a man would be those from which the coal is mined during a large proportion of the total working year. On the other hand in the Middle West where certain coals are of a nature to prevent mining and storage during slack seasons, because of the likelihood of spontaneous combustion or of other deterioration of the coal, the miner, in agricultural districts, finds in slack mining seasons, opportunity all about him for employment at seeding and cultivating the arable land and harvesting therefrom the annual crop. *Coal Age* does not understand why these points appear to have been altogether ignored by the operators in their arguments before the Commission. *Coal Age* does not hesitate to declare its policy that every honest worker who is willing to labor diligently when opportunity is afforded him can and therefore should be given a generous wage. The product of the country will afford more than a bare existence and hence "the bread of carefulness" is not enough. However, in determining what this wage shall be, the employer should take into account the total earning power of the man throughout an entire year and cannot be expected to provide for 12 months living on six months working, when the other half of the time can well be employed in other work readily available to the miner if he will accept it. We must insist, therefore, that it is the total earning capacity of the mine workers that should be taken into account in determining whether working conditions and wage afford a reasonable opportunity to the men employed in the bituminous coal mines.

Co-operative Service

THIS IS a day of co-operation—big things that cannot be done by one man or one company alone can be accomplished through united effort. Moreover, it is a day of service. More and more we are coming to a realization that for permanent success the sale of commodities must be made on the basis of genuine service to the purchaser. All of which leads us to ask why not combine these two ideas into one—co-operative service?

A splendid opportunity to accomplish this is just now available to the coal men of the country. Definite

means are also at hand. The way to put this thought into operation at once is by placing a service engineer on the staff of one of the larger coal dealers' associations. Such a man would be made available to the member companies, and he could assist them in solving their own and their customers' problems.

The American Gas Association has followed such a plan as this most successfully. Its scheme provides for an engineer of large experience and ability who, on request, goes about the country to aid the various local gas companies in handling the large or particularly difficult special problems that are involved in the utilization of gas. This engineer also makes general surveys of local conditions in order to develop industrial gas-fuel prospects. The gas company desiring the services of this engineer pays the association for his time and expenses, and the engineer is paid by the association on a straight salary basis. Thus the cost is distributed among those companies which get the benefits and no one is taxed beyond his own desires. Best of all this plan makes available a higher-grade man than any of the separate companies alone could afford to hire, and, at the same time, when he is not engaged in outside work the engineer can give the association valuable assistance in solving its problems at an annual cost that is almost nominal.

In the coal trade today the idea is becoming more and more prevalent that the coal dealer, whether the sales department of a mining company or a jobber or a wholesaler, must assist the user of the coal in the adoption of efficient methods. This policy will form a basis for secure and happy business relationships with the large users of coal; and the policy of co-operating in such a plan certainly gives great promise of success.

To teach a user of coal how to make two tons do the work of three, or even four, may seem a shortsighted sales policy, as it will reduce the tonnage which can be delivered to that fuel purchaser. However, if the user is not thus assisted by the dealer, someone else will supply the help or he himself will provide it; and even looking at the matter from a purely selfish point of view one should recognize that the man who does the teaching is the one who is going to get that user's future business.

The large service to the public involved in the teaching of fuel efficiency should not be overlooked. Anything which develops more economical utilization of our fuel supplies contributes to the general good of the country. Everyone gets the benefit of this. But those will profit first who are most intimately associated with that part of the industry which does the good work.

COAL AGE proposes and would urge this plan. It is an innovation in the coal business, but has been proved to be a policy of great advantage in other fields. Coal is a public necessity and one ever being more regarded as a public utility, and for this reason the coal industry must endeavor to advance in public service.

A Good Motto for the Miner

BUT PUT THE OTHER MOTTO IN THE HOME OF EVERY COAL CONSUMER

Storm Prices for Retailed Coal

Too often is it customary for the retailer to put five horses on a wagon or have his motor truck stalled for several hours in a snowdrift or in a street jam and pocket the loss that such conditions make necessary, hoping that he will be able to make good that deficit by charging more than a fair price to the customer who buys early and so gives him less trouble.

That customer who provides storage facilities at much cost is well worthy of more kindly consideration. Great is the need to make the man whose motto is always "Better late than never" change it to "Better never late." Coddling the indifferent makes the careless survive in place of the fittest. So often have we taken care of the laggard that he tends to remain doless and self-indulgent. He believes that civilization should be organized to take care of him.

The retailers have made up their minds to require henceforth that the high cost of storms be paid by those who will not provide for coal delivery before the wind begins to whistle and the snow to drift. The cost of this year's snow to the retail coal merchants of Manhattan and the Bronx is said to have been no less than a quarter of a million dollars. On their stationery will hereafter appear a statement that the customer will have to pay more for coal delivered during a snow storm, a storm signal that the buying public will do well to heed.

Recent experience has shown that it is rarely safe to relieve the public of the consequences of its acts or failures to act. If what is wanted can be obtained without provision, why provide? If errors committed can be escaped, why avoid errors? If follies are forgotten and forgiven, why be wise? If prudent foresight does not bring a reward, why be prudent? If an expenditure for the public is money out of pocket, why not keep the money? We have not arrived at such a degree of social excellence that we can henceforth avoid the necessity of providing rewards to the good and of allowing well-merited misfortunes to fall on the indifferent.

DISCUSSION *by* READERS

EDITED BY JAMES T. BEARD

Shifting the Worker

Letter No. 1—I have been reading with much interest the experience described in the inquiry of "A. H." entitled "Shifting the Worker," *Coal Age*, Feb. 12, p. 327, and it strikes me that there may be two sides to this question. In the first place, the fact that the electrician offered our friend a change from the substation to the bonding gang would indicate that the mine was not under one head; or, if it was, the superintendent was not IT.

From the tone of the letter, it would seem to me that the superintendent had charge of the substation and its attendant, while the electrician was in charge of the bonding gang. If that was the case perhaps it was not the first time the superintendent had been up against this same proposition. If it was not the case, I think the electrician was very much out of order in offering the man at the substation a change without first consulting the superintendent. Either way we look at it, however, the superintendent if naturally quick-tempered, can be excused for going up in the air when approached in the manner mentioned.

It does not seem to me possible that if the superintendent was, as he should be, the head of the company's operations, the electrician would have had the nerve to go over his head. This may be the real reason that our friend received such a warm reception from his superior officer. In my experience I have seen just such cases as this. In one instance, a mechanic was sent out by the city office, and presumed a great deal on that fact, asserting his authority and taking every occasion to show the superintendent that he did not consider him as his superior. Take it from me, I can think of nothing that will make more dissension and hard feeling than this.

Kind Treatment and Shifting Efficient Workers Bring Big Returns

It is not my meaning that I approve of the way the superintendent handled this case, for I do not. I have filled the position of superintendent of mines for twelve years and I know it is the wrong way to meet a man who is seeking to better his condition. It costs nothing to be polite and often brings big returns. My experience is that it pays to treat all your men more as if you were their guardian and was looking after them, rather than as a boss who was there to get work out of them.

As for changing men, I have often found it most beneficial, all around, to change a man from one place to another. I would do almost anything to keep a man if he was of any account. I figure that a man you know is an asset, while a man you do not know is a liability. I have, at times, taken a man from one assistant and persuaded another to give him a trial and, by so doing have made a good man out of a former trouble-maker and kicker. It proved that the first assistant let his personal feelings govern him.

On other occasions, I have taken a man from one mine where he could not get along with the boss and put him at another mine and found him a first-class man; and have reversed the operation with the same two bosses and got the same results. When a man comes to me in a respectful way and asks for a change and I can accommodate him without lowering the efficiency of the plant or creating friction, I make the change. Should that, for any reason, not be advisable I tell him so, stating the reason.

My policy has always been to treat the men who are under me as I would like to be treated if our positions were reversed. I make no promises that I may not be able to keep. It is often possible to keep one's men in a good humor and get better results, by talking to them and explaining to them just how certain changes would effect them and yourself, rather than to refuse a request and give no explanation. No man expects you to injure yourself in order to help him. It is my earnest hope that we will all understand each other better some day, and the boss and his men will co-operate more fully.

Burgettstown, Pa. SUPERINTENDENT.

Roller Bearings for Mine Cars

Letter No. 6—Referring to the letter of W. H. Noone, *Coal Age*, Jan. 15, p. 148, it is pleasing to note that everyone is not of the same opinion regarding mine-car equipment, and some are to be found to argue the merits of plain bearings in comparison with roller bearings. Difference of opinion invites a discussion that cannot fail to benefit all connected with the coal industry.

Personally, I take an entirely different view of the relative merits of plain and roller bearings as applied to mine-car equipment, than the opinion expressed by Mr. Noone, and I will try to answer some of the questions suggested by his remarks.

Mr. Noone assumes that the large majority of coal mines still have cars equipped with plain bearings. This is probably true; but they are mostly all changing over to roller bearings as fast as they can. In Illinois and Indiana, where the largest mines in the world are located, only the smaller mines, putting out somewhere around 100,000 tons of coal a year, are equipped with plain-bearing mine cars, and many of these smaller mines are changing over to roller-bearing equipment, where the life of the mine is long enough to warrant the investment.

I believe there are few large operators who have made a study of mining equipment and are not convinced that roller-bearing trucks are more efficient, viewed from any angle, than are plain-bearing trucks. This statement is borne out by the fact that the majority of the large producing operations are using roller-bearings.

At the recent meeting of the American Mining Congress, held at St. Louis, Mo., a large roller-bearing manufacturer had a sign on his exhibit, showing that they had done more business in their mine-car department, in 4½ months of 1919, than they had done during the fiscal years of 1914 and 1915. This is a good indication of the popularity of roller-bearing mine cars.

Saves Power and Cost of Lubricating Cars

Speaking of the saving of power, we all know that a wagon with its wheels free to revolve will run far more easily than the same wagon with its wheels chained to the wagon bed or spragged. If this is not the case, why does the driver of a wagon chain his wheels before going downhill? The fact of his doing this proves that rolling friction is less than sliding friction, and it makes no difference whether the friction is in the wheel hub or the wheel tread.

Again, the saving effected in the cost of lubrication is, to my mind, one of the greatest arguments in favor of roller-bearing equipment. When it is necessary to pay greasers $5 a day for squirting grease at the car wheels, as the cars come out of the mine, it is clear that whatever can be done to eliminate this wasteful practice should receive careful attention. To prove that there is a saving in the use of roller bearings on mine cars, in place of plain bearings, allow me to make a comparative estimate of these two styles of equipment.

Comparative Costs Plain and Roller Bearings

A plain-bearing truck requires the application of a lubricant at least four times a week when the mine is running. A mine using 700 plain-bearing cars will require the services of two greasers at $5 a day, making the labor cost for lubricating the cars $10 a day. Allowing that the mine runs but 200 days in the year, this item amounts to $2,000 in that time. Then, estimating the lubricant used at the low figure of 10c. a gallon, we will assume a quart is used on each car, each time it is greased, or one gallon, per car, per week. We have assumed that the mine runs 200 ÷ 6 = say 34 weeks, which makes the cost for lubricant, 34(700 x 0.10) = $2,380 expended for lubricant each year. Adding to this the cost of labor for greasing gives a total of $4,380 a year for lubricating 700 mine cars equipped with plain bearings.

Now, on the other hand, flexible roller-bearing mine cars should be lubricated every three or four months, depending on conditions in the mine and the use made of the cars. Estimating a car as lubricated, say four times a year, and allowing 4 lb. of grease, per car, each time the lubricant is applied, or 16 lb., per car, per year, gives the total cost for lubricant, in that time 700(16 x 0.10) = $1,120.

Now, the cost of labor for greasing cars, as taken from our records at the mine, is 40c., per car, per year. On this basis, the cost of greasing 700 cars four times a year would be 700 × 0.40 = $280, which, added to the cost of the lubricant, makes the total cost of lubricating 700 roller-bearing cars, $1,400 a year. This estimate shows a saving, in favor of roller-bearing cars, of 4,380 — 1,400 = $2,980, which is no insignificant item on the yearly cost-sheet of a mine. It will be observed that our estimate is based on minimum figures for plain-bearing and maximum figures for roller-bearing cars.

Lubrication is not the only item of saving, however. In the use of flexible roller bearings, we have eliminated the wearing out of the car wheels in the hub, so common with plain-bearing wheels. In our experience, the only wheels bought are those required for new cars, or to replace broken wheels, the latter being seldom required. Mr. Noone claims that the greatest disadvantage of roller bearings is in the bearings themselves, owing to their intricate mechanism, which he says makes it expensive to replace a broken wheel. When we break a wheel, the roller bearing is taken out of the hub of that wheel and inserted at once, with no trouble, in a new wheel secured from the stockroom, but this necessity seldom occurs.

Wrecks will happen in mines, at times; but this is no argument in favor of plain bearings. New wheels must be bought to replace the broken ones; and the roller bearings are then removed from the broken wheels and placed in the new ones with little trouble. There must be some types of roller-bearing wheels where this cannot be done, but we have not had this trouble. In my opinion, less than 5 per cent of the wheels broken in mines are the result of wrecks, the large majority being due to worn-out wheel hubs and axles, which a roller bearing reduces to a minimum.

Tests Demonstrating the Saving of Power

Referring to Mr. Noone's claim that the saving of power, in the use of roller-bearings, would have to reach 50 per cent to offset the increased cost of maintenance and admitting, for the sake of argument, that there is some increase, I want to refer him to the test conducted by P. B. Lieberman, at the Greensberg Coal Company's mine. At that test, the H. C. Frick Coke Co. was represented by the chief mechanical engineer, C. E. Huttelmaier.

The Greensberg test showed a saving, in favor of roller-bearing cars, of 47.25 per cent, by the reading of the dynamometer. At another test made at Carbondale, Pa., the average drawbar pull for plain-bearing cars was 32 lb., per ton, as compared with 13 lb., per ton for cars equipped with flexible roller bearings. This test also developed the interesting fact that it takes twice as much power to start plain-bearing cars as is required for those mounted on roller bearings.

The reference made in the last paragraph of Mr. Noone's letter, regarding the fact that roller bearings are not used on surface railroads, has little application to their use on mine cars. It is well known that roller bearings, like other machinery, have load limits. The fact that they are not used by railroads is due to the enormous tonnage carried on those cars. It is clear that the bearing would have to be very large to stand up under that service, and this fact bars their use on railroads. Moreover, speed is another point to be considered.

RICHARD W. HARRIS.

St. Louis, Mo.

Entering Mine with Open Light

Letter No. 2—It is with much surprise that I read the recent account of two deaths from blackdamp, and the comments thereon by a Pittsburgh writer. It is the old story of men who, through reckless daring or ignorance, rush into an abandoned place that has been standing idle and without ventilation, for a considerable time.

The account to which I refer states that three men entered an old slope, carrying nothing but a small

flashlight to dispel the darkness. The result was that two of the men were overcome by an atmosphere deficient in oxygen and probably containing deadly gases, and died before they could be rescued. The third man following the other two and seeing them fall managed to escape to the surface and give the alarm.

This accident occurred in No. 5 manway, of the Piney Run mine, which is located three quarters of a mile north of Blaine City, in Clearfield County, Pa. The comments of the writer at the close of the article, which show clearly that he had little practical mining experience in mines generating explosive or poisonous gases, should not be allowed to pass without correction.

Strange Advice for a Mining Man to Give

After taking the precaution to remark that "certain primary considerations should govern the investigation or entry of working places that have not been subjected to ventilation for any considerable time," he adds, "The following, well known but often forgotten, will serve as a basis: In entering an abandoned slope or shaft, an open lamp should be held in advance and at a level lower than the head. In entering an old working place, a mine safety lamp should comprise part of the equipment for the detection of any gas that may be present."

The strangeness of these remarks is that anyone, conscious of the need of "primary considerations" being necessary in respect to the entry of working places that are unventilated, should advise the use of both an open light and a mine safety lamp. Such advice is unthinkable as coming from a man of any practical mining experience in poisonous and explosive gases.

The most limited knowledge of these gases would have led this writer to have stated that the investigation of old abandoned and probably unventilated workings is a hazardous undertaking and should be done by competent, qualified men in an approved manner and with proper equipment. The carrying of an open light with a safety lamp into such a place is simply a call for the U. S. Bureau of Mines rescue car and the services of an undertaker. W. G. Duncan.

Connellsville, Pa.

Seasons in Coal Mining

Letter No. 1—A recent editorial that appeared in *Coal Age*, Nov. 6, p. 754, drew attention to the seasonable character of different industries, including that of coal mining, and the effect produced on the employment of labor, because of the unsteady work afforded, in the dull season, by reason of the inclemency of the weather or other conditions that lessen the demand for the article produced.

There is no doubt but that the change of the seasons is responsible for the irregular employment of labor in many branches of industry. This is particularly true in farming, carpentering, bricklaying and other outdoor employments. The gathering of ice can only be done in the ice season, just as the harvesting of the fields can only be performed as the crops mature.

As far as the mining of coal is concerned, the work can be performed with equal advantage in every season of the year. Considered in this light, coal mining is not a seasonable industry, though it cannot be denied that the operation of coal mines is determined and controlled by the demand for coal, which is always greater in the winter season than in the summertime. The coal industry is subject, therefore, to the law of supply and demand. In summer, the limited demand for coal quickly overstocks the market; and, for a time after the demand has increased, the supply of coal held in storage is sufficient to meet all requirements, and the mines continue idle for an indefinite time, owing to this oversupply.

In seeking a remedy for these conditions, the operator cannot be expected to lower the selling price of coal, in order to stimulate its movement in the market, any more than the miner can be expected to work for less wages during that season. The success of the industry demands a uniform price for coal and a uniform demand to insure uniform production.

The disintegrating nature of coal, especially soft coal, the lack of storage facilities and the additional cost of reloading the coal for shipment, make it impracticable or impossible to look to this source for remedy. Neither can the railroads be asked to establish a system of freight differentials, in order to stimulate the purchase of coal supplies during the dull summer season. This would throw the burden on the railroads, which have their own operating expenses to meet.

The coal industry is face to face with the problem of a maximum demand in the winter season, and a minimum demand in the summer time. What is to be done to equalize this demand throughout the year and make it possible to keep the mines running uniformly and regularly? In my opinion, the answer to this question is to inaugurate an energetic campaign that will urge the public to lay in their winter supply of domestic coal during the summer months, instead of waiting till cold weather sets in when everybody wants their coal delivered at once.

Campaign for Uniform Market Conditions

We must patiently hammer away at this problem to create a uniform market and demand for coal. Large dealers of coal, having ample storage facilities, should be urged to fill their bins during the summer, in readiness for the fall demand. This would have a good effect by helping to create a more uniform demand, for every month of the year. The consumer, however, should place himself in a receptive mood that will enable him to understand the need of his co-operation in this regard, which will go far toward solving the problem.

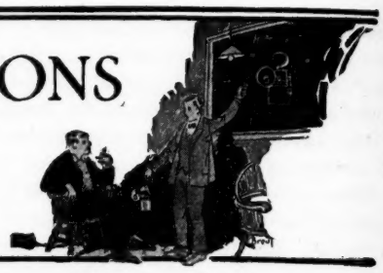
In the past, the public has not taken seriously the warning, "buy your coal in the summer," and the result has been an unavoidable shortage of coal during the last three winters. Coal consumers are not awake to their responsibilities in this matter. The handling and transportation of coal from the mine to the consumer is subject to less difficulties in summer than in winter, and this fact is worthy of careful consideration.

Before closing, let me suggest that the United Mine Workers of America might profitably take off their coats and jump right into the ring on this campaign. As mine workers, they are in a position to take an earnest stand for the purchase of coal, by the domestic consumer and by dealers in the summer months. The organization has able speakers, thinkers, writers and workers; they are live wires and it is to their interests, particularly, that good results should be accomplished in securing a uniform demand that will insure a uniform production of coal throughout the year.

Thomas, W. Va. Loyal Mine Worker.

EXAMINATION QUESTIONS

ANSWERED BY
JAMES T. BEARD



Miscellaneous Questions

(Answered by Request)

Ques.—A main entry is driven due north 1,925 ft. from the shaft bottom. A pair of cross-entries is started 350 ft. south of the face of the main entry and driven due east, a distance of 2,322 ft. All the entries are 8.25 ft. wide and 5.55 ft. high. The velocity of the air current is 492 ft. per min. and the air has a temperature of 56 deg. F. A door is placed on the main entry between the two cross-entries. The size of the door is 4.5 x 6.5 ft. Find the pressure per square foot on the door, also the total pressure.

Ans.—The pressure acting to close the door is the difference of pressure between the intake and return sides of the door. This difference of pressure, expressed in pounds per square foot, is equal to the unit of resistance for the pair of cross-entries, or the unit pressure due to the circulation in the cross-entries only. The total length of the cross-entry and air-course is $2 \times 2{,}322 = 4{,}644$ ft. The perimeter of the airway is $2(5.55 + 8.25) = 27.6$ ft., and the sectional area $5.55 \times 8.25 = 45.79$ sq.ft. For a velocity of 492 ft. per min., the unit pressure producing the circulation in the cross-entries is, therefore,

$$p = \frac{klov^2}{a} = \frac{0.00000001 \times 4644 \times 27.6 \times 492^2}{45.79}$$
$$= 6.776 + lb.\ per\ sq.ft.$$

The area of the door being $4.5 \times 6.5 = 29.25$ sq.ft., the pressure acting to close the door is $29.25 \times 6.776 = 198.2$, say 200 *lb.*

Ques.—The barometer at the top of a shaft is 30.2 in. and the temperature of the air, 64 deg. F. The depth of the shaft is 1,100 ft. and the thermometer at the shaft bottom reads 75 deg. F. Calculate the difference of pressure on the air between the top and bottom of the shaft, and the difference in the readings of the barometer at these two points.

Ans.—This is a question that cannot be answered with any degree of accuracy, except by the use of a logarithmic equation, and, for that reason, it should not be asked at a mine examination. It is evident that the difference of pressure between the top and the bottom of a shaft is due to the weight of the air column in the shaft. But, since the density of the air increases with the depth of the shaft, it is necessary to know the average density, or weight per cubic foot, of this air, before the weight of the shaft column can be found. Some will assume that the average density of the air is equal to half the sum of the densities at the top and bottom of the shaft, which is not even approximately true. That assumption would increase the pressure from $30.2 \times 0.49 = 14.8$ lb. per sq.in., at the top of the shaft, to 18.2 lb. per sq.in. at the bottom; and give a barometric reading, at that point, of $18.2 \div 0.49 = 37.1$ in., making the increase of barometer $37.1 - 30.2 = 6.9$ *in.*

As a matter of fact, however, the pressure is increased from 14.8 lb. per sq.in., at the top of the shaft, to 16.2 lb. per sq.in. at the bottom, making the barometric reading at the shaft bottom, $16.2 \div 0.49 = 33.0$ in., which shows an increase of barometer of $33.0 - 30.2 = 2.8$ *in.*

It is well to remember, in this connection, that the approximate rule of allowing 1-in. change in barometer to every 900 ft. of depth of shaft is based on the assumption of the density of the air being 0.0766 lb. per cu.ft. and takes no account of change in density due to changes in the pressure and temperature of the air.

Ques.—What would be the weight of 100 cu.ft. of carbon dioxide (CO_2), when the barometer reading is 28 in. and the temperature 60 deg. F.?

Ans.—The weight of 1 cu.ft. of air at the given barometric pressure and temperature is

$$w = \frac{1.3273 \times 28}{460 + 60} = 0.07147\ lb.$$

Since the specific gravity of carbon dioxide is 1.529, the weight of 100 cu.ft. of this gas, at the given temperature and pressure, is $100 \times 1.529 \times 0.07147 = 10.7$ *lb.*

Ques.—What pressure will be required to force 20,000 cu,ft. of air per minute through an airway 14 ft. wide, 6 ft. high and 3,000 ft. long?

Ans.—The perimeter of this airway is $2(6 + 14) = 40$ ft., and its area $6 \times 14 = 84$ sq.ft. For a circulation of 20,000 cu.ft. per min., the velocity of the air current is $20{,}000 \div 84 =$ say 238 ft. per min. The rubbing surface of this airway is $3{,}000 \times 40 = 120{,}000$ sq.ft. The unit pressure required is, therefore,

$$p = \frac{ksv^2}{a} = \frac{0.00000001 \times 120{,}000 \times 238^2}{84}$$
$$= 0.8\ lb.\ per\ sq.ft.$$

Ques.—If 10,000 cu.ft. of air pass each minute through an entry having a sectional area of 49 sq.ft., how much air will pass per minute through an airway having an area of 12 sq.ft., the length of the airways and the power being the same in each case?

Ans.—For the same length of airway, the quantity of air circulated by the same power will vary directly as the sectional area and inversely as the cube root of the perimeter. Without knowing the shape or the dimensions of these airways, it is not possible to determine their perimeters, which must be known before the question can be solved.

Assuming that the airways are square, however, the quantity of air circulated by the same power will vary as the cube root of the fifth power of a side of such airway. In this case, the side of a square airway whose area is 49 sq.ft. is $\sqrt{49} = 7$ ft.; and that of a square airway having an area of 12 sq.ft. is $\sqrt{12} = 3.464$ ft. Then, the quantity ratio being equal to the cube root of the fifth power of the ratio of the sides and calling the required quantity x, we have,

$$\frac{x}{10{,}000} = \sqrt[3]{\left(\frac{3.464}{7}\right)^5} = \sqrt[3]{0.4948^5} = 0.3096$$
$$x = 10{,}000 \times 0.3096 = \text{say } 3{,}100\ cu.ft.\ per\ min.$$

Retail Coal Dealers Review Timely Problems

Coal Dealers Discuss Insurance—Assert That Railroad Administration Made Unnecessary Confiscations—Bonus System Urged

AT THE Pennsylvania Hotel in New York City on Thursday, Feb. 26, the second annual regional meeting of the New York State Retail Coal Merchants Association, was held. The meeting brought out a very large attendance of coal men from what is termed the Metropolitan district, which includes dealers from Long Island, Staten Island, Westchester County, and Greater New York. Richard J. Wulff, second vice president of the association, presided at the morning and afternoon sessions.

G. W. F. Woodside spoke at the forenoon session on industrial insurance, and told of the great success that has attended the Coal Dealers' Mutual Insurance Association, organized several years ago to provide a reasonable form of insurance for the coal dealers of New York State, as required by the compensation act. While the rates are the same as provided by the old line companies, or the State Insurance Fund, Mr. Woodside stated that the Coal Dealers Association had been able to remit to the insurers annual dividends in good amount and, in addition, had created a very formidable surplus after reserves.

Open discussion followed, in which a number of dealers testified as to their experience with the coal dealers' insurance, and the amounts saved, as compared with old line companies. "Cost and Cost Accounting" was a subject that was discussed by Paul K. Randall of Scarsdale Supply Co., and Roderick Stephens of Stephens Fuel Co.

Government Only Muddles Distribution

About the most interesting paper read during the sessions was that of Ellery B. Gordon, now secretary and manager of the National Retail Coal Merchants Association. His subject was "Coal Service and the Government." The gist of his paper was that relief could only come to the coal trade when the task of distribution is taken from incompetent Government appointees and returned to practical coal men. The Railroad Administration, he held, was incompetent to handle the coal industry, and that there had been unnecessary confiscation and diversion of coal which had resulted in heavy losses to retailers and higher costs to consumers.

"The legitimate relation of Government to industry does not mean the infliction of intolerable conditions to perpetuate the jobs of certain bureaucrats in Washington," he said. "It does not mean paternalism for the benefit of politicians with socialistic tendencies, nor does it mean subsidizing the entire industry for the benefit of a minority, even though that minority be a labor organization with thousands of votes, nor does it involve authority to completely upset the established machinery by bungling efforts and inexcusable interference with production, transportation and marketing."

At the afternoon session three papers were read on "profit-sharing and bonus systems." Frederick Ruby of the Middle Lehigh Coal Co. of Brooklyn, told how his company gets good results from its employees due to its bonus system. Hugh McDonald of the Scarsdale Supply Co., stated that his company uses the profit-sharing basis in order to get the fullest measure of co-operation from its employees.

Harold B. Weaver, vice president of the Chicago Motor Bus Co., told of the experiences of various corporations with which he has been associated, and was a warm advocate of the profit-sharing plan. His description of the plan followed by the Yellow Taxi-Cab Co. of Chicago, which he stated had been most successful, was listened to with interest on the part of the dealers.

"Here, said Mr. Weaver, the taxi-cab company with about the worst type of labor, had been able to secure the most hearty co-operation of its employees, and while pursuing an open-shop policy in defiance to the American Federation of Labor, had built up a paying service which was second to none in the United States."

Lambie, New Head of West Virginia's Mining Department

R. M. Lambie, whose likeness appears herewith, was, on Feb. 14, commissioned as the new chief of the West Virginia Department of Mines, succeeding W. J. Heatherman, who had most acceptably filled that post for a period of two years, the retiring chief becoming general manager of the mines of the Cleveland Cliffs Iron Co. in Ethel, Logan County, W. Va.

R. M. Lambie

Mr. Lambie is from Mount Hope, W. Va. Since he came to this country from Scotland in 1904, he has worked in all the positions around the mines, both as a miner and as an executive, most of his career having been with the New River Co. and the McKell Coal & Coke Co., both in Fayette County. Until within a short time before his appointment he had been a district inspector, having been appointed to that position Jan. 15, 1918. He resigned during the latter part of 1919 to become assistant to the general manager of the New River Co., but soon thereafter was tendered the appointment as head of the West Virginia Department of Mines.

Thus will it be seen that not only by virtue of his varied mining experience but also through his duties as a district inspector he is in possession of a thorough knowledge of the mines of the state and in a position to fill the duties of the department with efficiency.

NEWS FROM THE CAPITOL

BY PAUL WOOTON

Hines Seeks to Excuse His Confiscatory Policies

ON Feb. 26 the Director General of Railroads submitted to the Senate the following report, in response to a recent resolution by Senator Frelinghuysen, N. J., as to the authority of the Administration over the distribution and export of coal:

The authority, powers and duties with respect to shipment, distribution, apportionment and storage of coal and coke, delegated to the Director General of Railroads by the Fuel Administrator, are contained in Executive Order of Oct. 30, 1919.

In anticipation of the strike of bituminous coal miners, expected to commence Nov. 1, 1919, the President on Oct. 30, 1919, issued an executive order revoking orders of the Fuel Administrator dated Jan. 31, 1919, and Feb. 20, 1919, to the extent necessary to restore all of the rules, regulations, orders and proclamations therein suspended concerning fixing prices of lignite and bituminous coal at the mines; fixing or regulating commissions of persons and agencies performing the functions of middlemen dealing in bituminous and lignite coal; fixing or regulating gross margins of profits of wholesale and retail dealers in bituminous and lignite coal.

Delegates Powers to Hines

Thereafter the Fuel Administrator designated by order dated Oct. 31, 1919, the Director General of Railroads and his representatives to carry into effect the restored order of the Fuel Administrator of Jan. 14, 1918, and to make such diversions of coal in the possession as common carriers, of railroads under his direction as might be necessary in the emergency to provide for the requirements of the country in the order of priority set out in the preference list of the order of the Fuel Administrator dated May 25, 1918, which was as follows:

Railroads; army and navy together with other departments of the government; state and county departments and institutions; public utilities; retail dealers; manufacturing plants on war industries boards preference lists; manufacturing plants not on war industries board's preference lists; jobbers, lake and tidewater.

On Nov. 5, 1919, the President issued a second executive order directing the fuel Administrator as occasion may require to restore, change, or make such rules, regulations, orders and proclamations fixing the price or regulating the production, sale, shipment, distribution, apportionment, storage or use of all coal or coke as in his judgement might be necessary.

The Director General of Railroads on Oct. 31, 1919 took control of all bituminous coal then on wheels or otherwise held in the possession as common carriers of railroads under Federal control, and also subsequently of all coal loaded in railroad cars during the strike, for the purpose of carrying into effect the powers delegated to him by the Fuel Administrator.

The exercise of these powers by the Director General of Railroads has been in pursuance of the orders above referred to and of the following additional orders subsequently issued by the U. S. Fuel Administrator:

Order of Nov. 12, 1919, providing that the executive order dated Oct. 30, 1919, restoring certain rules, regulations, orders and proclamations relating to the prices of bituminous and lignite coal should not be applicable to bituminous coal shipped on and after Nov. 13, 1919 under a bona fide contract enforceable at will entered into prior to Oct. 30, 1919, and that coal shipped under any such contract and diverted in transit should be paid for by the party receiving same at the price to which the shipper would be entitled to bill same to the original consignee thereof.

Order of Nov. 21, 1920, providing that no anthracite coal produced in the United States should be sold, shipped or distributed except to dealers or consumers and for use and consumption within the United States, its insular possessions and Canada.

Order of Nov. 22, 1919, providing that coal dumped into barges, scows, boats or other vessels on lakes, rivers and other inland waterways should be subject to diversion in like manner and to the same extent as bituminous coal loaded in cars of a common carrier under the orders of the Fuel Administrator in effect Nov. 22. 1919, relating to the diversion of coal in transit; that coal diverted under authority of the order should be paid for by the party receiving the same in accordance with the provision relating to payment for diverted coal contained in the order dated Nov. 12, 1919; and authorizing the Director General of Railroads and his representatives to make such diversions as may from time to time be necessary in the order of the priority set out in the order of the Fuel Administrator dated Oct. 31, 1919.

Order of Nov. 22, 1919, authorizing the Director General and his representatives to make such rules, regulations and orders restricting or prohibiting the use or consumption of bituminous coal for the purpose of producing or manufacturing coke in beehive ovens as may from time to time be necessary.

Order of Nov. 29, 1919, providing that the regulations of the Fuel Administrator permitting a haulage charge to be made in the case of coal from wagon mines when shipped in box cars to be suspended, to include such coal when shipped in open top cars.

Order of Dec. 6, 1919, authorizing the Director-General of Railroads and his representatives to make such diversions of coke in transit as may be necessary in the emergency.

Order of Dec. 8, 1919, authorizing the Director-General and his representatives to make and prescribe such local and general regulations restricting the delivery, use and consumption of coal, coke or other fuel or power generated or produced by the use or consumption of coal and other fuel as may from time to time be necessary in the emergency.

The authority delegated to the Director General has, since the original delegation, not been curtailed by the President or the Fuel Administrator, except as it may have been affected by the above mentioned order of Nov. 12, 1919, which provides for the payment for diverted coal by the person receiving same at contract instead of Government price. The authority of the Director General has been enlarged from time to time and to the extent indicated in the orders above described. Response to inquiry as to the extent the delegated powers are now being exercised by the Director General can be better made in the answer to paragraph 4 of the resolution and will be included therein. All papers, documents, etc., referred to in paragraph 3 of the resolution have been above described and copies thereof are attached hereto as requested.

Coal Committees Formed

The existing agency through which the Director General is exercising the powers delegated to him are substantially the same as those issued on Oct. 31, 1919, immediately upon his assumption of the duties imposed by the order of the Fuel Administrator of the same date, with such enlargements as the increasing difficulties of the situation demanded. The organization at first consisted of the Central Coal Committee and Regional Coal Committees. Subsequently various district and local coal committees were formed as occasion demanded and each of such regional, district or coal committees included in its membership a representative appointed by the Fuel Administrator. Such representation was in each case a practical coal man and in almost all instances one formerly connected with the Fuel Administration. The Central Coal Committee exercised general supervision over the other committees, kept fully informed by daily telegraphic reports as to the daily coal supply and needs of the country and directed through the other committees the distribution of coal in conformity with the priority list established by the Fuel Administrator and the needs in the various parts of the country. A full description of these agencies and the work accomplished is contained in the report of the Director General for 1919, a copy of which is hereto attached.

As was expected, bituminous coal production during the period of the strike from Nov. 1 to Dec. 13, 1919, fell off tremendously and for the entire period aggregated but 36.2 per cent of the normal production. Of the coal actually loaded during this period, by far the greater portion, in fact almost

70 per cent, was loaded in the Allegheny and Pocahontas regions in the States of Pennsylvania, Maryland and West Virginia. Practically no coal was produced in the territory west of Pennsylvania to the Rocky Mountains. In addition to this there was independently of the coal strike an extraordinarily large demand for coal by reason of the fact that much less coal than usual had been bought in the early part of the year. In these circumstances consumers' stocks early during the strike began to show signs of depletion and it became necessary to route large quantities of coal over most abnormal and unforeseen routes from producing fields in Pennsylvania, Maryland, Kentucky and West Virginia to the Central West and beyond. This action was indispensable if a coal famine was to be avoided in that consuming territory and by the termination of the strike approximately 40 per cent of the total production in the Allegheny and Pocahontas regions, about 4,000 cars per day, was thus being moved West.

Long Hauls Reduced Car Supply

Simultaneously, in order to avoid loss of market for extraordinary production in the Pocahontas region, which was not readily susceptible to all-rail movement, unusual measures were taken to move such coal by water from Hampton Roads to New England and other North Atlantic destinations.

All of this resulted in an extraordinary disruption of the coal transportation facilities of the country, since it was necessary to divert great numbers of coal cars from their usual routes to distant destinations in the West. This longer haul of course greatly increased the average time of car use per load and therefore correspondingly reduced the coal-car supply. Furthermore the character of coal car used in the East was not well adapted either as to size or construction to the usual requirements of the West, and this caused additional delays in the car movement.

Unfortunately during the strike period and down to the present time there has been a succession of severe storms and cold spells, coupled with depletion of train and yard employees on account of the influenza epidemic, which has further seriously interfered with the handling of coal and all other commodities. Notwithstanding all of these difficulties and the abnormal demand for transportation of every character, the amount of coal produced per week greatly exceeded the weekly production during the winter in the past.

On account of the strike and these extraordinary conditions it has been impossible since the strike to supply coal in sufficiently large quanties to meet the extraordinary demands growing out of the depletion of stocks during the strike. This is true despite the fact that the total bituminous coal produced in January has been considerably above normal for that period.

It has therefore been found necessary up to the present time to continue in slight measure the control over distribution which was exercised by the Fuel Administration during the strike. Every effort has been made to reduce to a minimum this interference with the normal distribution by shippers and the Railroad Administration has constantly followed the policy of caring only for emergency needs and those of essential consumers in the higher priority classes. While the railroads made contracts for enough fuel for their operation, the coal operators have insisted that the policy adopted at their instance by the Railroad Administration not to place cars preferentially for railroad fuel be adhered to. The result is that in times of car shortage the railroads have not been able to get their contracts completely supplied and hence another reason for the continued necessity of diversion has been the need of caring for fuel supply of the railroads to the extent that the railroad contracts were not fulfilled.

I might also point out that upon the earnest insistence of the operators that their contracts made prior to Oct. 30, 1919, be protected, the Fuel Administration order of Nov. 12, 1919, was issued with the result that in many parts of the country operators have shipped only on such contracts, hence people who had not such contracts were unable to buy coal, particularly in the East, where under the Government price program the higher price was permitted for export coal than for coal sold domestically. In other words, a condition was reached where there was practically no spot coal available and in consequence a number of essential consumers have been unable to get coal except as a result of diversion. These factors have contributed materially to the necessity for continuing the exercise of the power of diversion despite the fact that the policy of the Central Coal Committee has been to cut export to a minimum.

Embargo Laid on Exports

At present an embargo on the movement of all coal for shipment overseas is being maintained at all Atlantic Coast ports and no coal is permitted to be exported except on application by shippers, recommended by the Regional Committee having jurisdiction and approved by the Central Coal Committee and representatives of the Shipping Board and State Department who are sitting with it. On account of the present serious shortage of coal in the Northeastern section of the country no export permits are being issued for coal from ports north of Norfolk and only such coal is permitted to be exported through Norfolk as is not required for consumption in this country or cannot be transported to destinations in this country by available boats in the coastwise trade. Export permits for such coal are issued in order that the coal may be promptly unloaded and the cars returned to the mines for further loading. Care is exercised in the issue of export permits to insure an equitable distribution of them among applicants.

Coal Is Non Free To Move

With the exception of the embargo on export coal all restrictions placed on the distribution of coal in the United States and Canada during the strike by the various coal committees have been removed and the normal distribution of coal is interfered with only where emergencies arise which necessitate diverting to railroads, Government and state departments and institutions, public utilities and other essential consumers. In making such diversions the coal committees having jurisdiction select as far as practicable coal moving to consumers of less essential character and occupying a lower position on the Fuel Administration preference list. Such diversions are necessitated by the inability of some essential consumers to secure by purchase the additional coal they require, there being practically no coal available for sale in the Northeastern section of the country at the price fixed by the Fuel Administrator. Such diversions are made only after the committee having jurisdiction is assured by the applicant of his actual necessity as required by the regulations established at the beginning of the strike.

For the purpose of continuing this present control over the distribution of bituminous coal the Central Coal Committee continues to function and with respect to the export situation operates through a subcommittee on which the State Department and the Shipping Board have representatives. In so far as diversion of coal is necessary for the protection of consumers within the United States, the Central Coal Committee relies upon the regional organizations which for this purpose have maintained in part the regional coal committees.

To Advance R. R. Fuel

The Interstate Commerce Commission and the Department of Justice have been advised formally by J. D. A. Morrow, vice-president of the National Coal Association that if the individual railroads return to the practice of assigning cars to mines that there should be an immediate advance in the price of railroad fuel of 10c. a ton. It will be recalled that with the abolition of assigned cars the operators were required to deduct 10c. from the Government price.

An attempt to stop diversions of coal by legal action has been made by the New Haven Utility Corporation of New Haven, Connecticut. An injunction has been sought in the Supreme Court of the District of Columbia alleging that the company is being deprived of its property without due process of law.

President Orders New Fuel Control

Names Board of Four to Take Over Shipping and Export Administration

Coincident with the signing of the Railroad bill tonight, President Wilson issued executive orders providing for continuation of the powers of the Fuel Administration, but dividing them between the Director General of Railroads and a commission of four. Director-General Hines will retain jurisdiction over domestic distribution, while the commission will handle bunker and export coal matters.

The commission will be composed of A. W. Howe, Rembrandt Peale, F. M. Whittaker and J. F. Fisher. It will function through the Tidewater Coal Exchange, which had been suspended before the resignation of Dr. Garfield as Fuel Administrator.

The order creating the commission is effective until April 30 next. The order said the action was taken "because of the present emergency and in order to insure an adequate supply and equitable distribution, and to facilitate the movement, and to prevent, locally or generally, scarcity of coal."

It directs specifically that the order issued by the U. S. Fuel Administration Nov. 6, 1917, relative to tidewater transshipment of coal at Hampton Roads, Baltimore, Philadelphia and New York, and for the employment of and co-operation with the Tidewater Coal Exchange, as a common agency to facilitate transshipment and to reduce delays in the use of coal cars and coal-carrying vessels," suspended by Dr. Garfield on Feb. 20, 1919, be reinstated.

A second order, investing Mr. Hines with the powers of Fuel Administrator so far as domestic distribution is concerned, said doubt had arisen as to whether he could continue to exercise those powers after the return of the railroads to private control. A new order was therefore issued extending Mr. Hines' authority beyond the date of the return.

Railroads' Coal Confiscation Illegal

National Coal Association Says Victims of Confiscation Can Recover

Rush C. Butler, the general counsel of the National Coal Association, declares that all confiscations and diversions of coal by the Railroad Administration made subsequent to Dec. 13, 1919, the date of Dr. Garfield's resignation as Fuel Administrator, are invalid and unlawful, subjecting not only the Administration itself but the individuals to liability for any damage attendant on such action.

Mr. Butler holds:

1. That the Railroad Administration's authority to divert coal under Dr. Garfield's order of Oct. 31, 1919, expired when Dr. Garfield's resignation was accepted by the President, Dec. 13, 1919. 2. That every carload of coal so diverted by the Railroad Administration since Dec. 13, 1919, was diverted without authority of law. 3. That confiscation of coal by the railroads is "unlawful conversion" and that the owners of the coal are entitled to damages to compensate them for the loss. 4. That where the Railroad Administration has confiscated at less than Government prices, coal moving on contracts, the owners of such coal can recover the difference between the contract price and the Government price. 5. That not only are the carriers involved responsible for losses in the foregoing, but that the officials of the Railroad Administration concerned are personally liable for the amount of damages and may be sued therefor.

Coal and Oil-Land Leasing Bill Becomes Law

President Signs the Measure Which Will Throw Open Over 6,700,000 Acres

At Washington on Feb. 25 President Wilson signed the oil-land leasing bill. The total area of oil lands thus thrown open for lease is estimated at more than 6,700,000 acres, while proved coal lands under Government withdrawal total approximately 30,000,000 acres, with 39,000,000 acres still to be classified. Phosphate lands are estimated at 2,700,000 acres, with sodium and other mineral deposits equally as extensive.

In withdrawn coal lands North Dakota leads the other twelve states with more than 11,000,000 acres, although its deposits are not considered as valuable as those contained in the 2,800,000 acres of Colorado, which are appraised by the Government at an average of $75 an acre, the highest valuation for Government coal lands in any state.

The 7,238,515 acres in Wyoming get the next highest appraisal of $53 an acre, the total valuation of nearly $400,000,000 being the highest for any state. Other states with extensive coal lands are Utah, with 1,069,600 acres; Montana, with 5,782,216 acres, and New Mexico, with 665,565 acres.

Idaho Ranks First in Phosphate Land

Idaho ranks first in Government phosphate lands, with a little more than 1,000,000 acres, and Wyoming second, with 900,000 acres, these deposits also being considered the richest. The areas in Florida, Montana and Utah range from 100,000 to 300,000 acres.

Authority for the administration of the oil-leasing law is placed with the Secretary of the Interior. On oil lands the leasing rate will be 5 per cent. of the oil produced, and this may be demanded in oil or cash, as the Government may elect. For this year at least the Government is expected to collect its royalties in oil.

John Barton Payne, chairman of the Shipping Board, who soon is to become Secretary of the Interior, recommended recently this course to the Interior Department so the Shipping Board would be assured of an oil supply at fair prices. When he takes over the Interior Department Mr. Payne is expected to carry out his own recommendation in the matter.

A. H. Fay Enters Private Employment

The departure of A. H. Fay from the service of the Bureau of Mines to enter private employment was marked by a bit of ceremony during which J. W. Thompson, the law examiner of the Bureau, made an address in which he set forth the things of value which had been contributed to the Bureau's work by Mr. Fay. Incidentally Mr. Fay will go into private employment with the best brief case that could be bought in Washington.

Public Utility Associations Protest Against Increased Cost of Coal

Representatives of Public Utility Associations appeared before the President's Coal Commission Feb. 17. Vigorous protests were registered against the passing on of the 14 per cent advance by the operators. It is stated that of the 50,000 tons of coal used annually by the public utility companies, 98 per cent of it is contract coal, which is causing the public utility consumers to pay the wage advance which they contend should be paid by the operator regardless of contract provision.

The commission was acquainted with the serious situation confronting the public utilities, making it almost impossible for them to meet the increased coal cost. Representatives of traction lines declared that the point had been reached where it is impossible to add to receipts by increasing fares. Further increases will result in decreased revenues, it was declared.

Objection also was made to the manner in which coal is being confiscated and diverted. While the public utility men testified that they are anxious to have governmental control of coal continued, they prefer some other agency than the Railroad Administration as the distributors.

Chairman Robinson asked one of the witnesses if it were not the duty of large consumers of coal to store as much as practicable of their winter supply during the spring and summer months. This was answered in the affirmative, but the request was made that others who would be benefited by the policy should make reductions in prices so as to offset rehandling and other expenses.

Failure of Adequate Car Supply Affects Price of Coal

Appearing before the Bituminous Coal Commission, T. H. Watkins, president of the Pennsylvania Coal & Coke Co., in the operation of soft coal mines in central Pennsylvania, charged that the Railroad Administration had put into effect a "tyrannical system" of coal-car distribution by which coal operators were deliberately discriminated against.

Under this method, open top cars were arbitrarily offered to operators by the purchasing department of the Railroad Administration under an arrangement by which operators would charge the Railroad Administration a lower price for coal than that offered the consumer. Operators who accepted this arrangement, he said, were able to get three times the car allotment originally apportioned to them by the Railroad Administration, while those who declined to accept it suffered for lack of cars, many of them not having one-third of the supply promised them. Failure of adequate car supply, Mr. Watkins said, was an important factor in the price of coal in the market. Because of their inability to get cars when needed, he pointed out, many operators have been forced to run their mines at huge cost, while not getting coal to the market.

At the end of the day's hearing, Chairman Robinson announced that no further hearings would be held. The commission would consider the evidence submitted, he said, and endeavor to "reach a unanimous agreement as soon as possible." "It is a matter of record," said Mr. Watkins, in appearing before the commission, "that the purchasing department of the Railroad Administration, under charge of John Skelton Williams, not only resorted to the practice of assigned cars, but had the audacity to call some of the leading coal operators of the United States to Washington, while Dr. Garfield was at the head of the Fuel Administration and made to them a definite proposition as to a guaranteed car supply to get cheap fuel.

"The Railroad Administration not only made this offer, but defended it and accused operators who resented and protested against its continuance of a lack of patriotism—operators who were not only trying to protect their customers, and who had vision and experience enough to know the final evil effects in reduced production through strikes and unrest." Mr. Watkins went on to say that this "unfair method of distribution," as he called it, had worked tremendous hardship to various mine operators. He submitted records to show that from March 1 to March 23, 1918, while some mines were able to get cars to carry the product of 160 working hours, others got enough cars to work only 27 hours.

Why Didn't McAdoo Become an Operator?

"It is possible under this system for a railroad purchasing agent, if he so desires, to put an operator or a district out of business," said Mr. Watkins. "The miner who has suffered from this, the operator who has suffered from it, may be excused if he uses emphatic and violent language in protesting. And the general public, what have they to say? Unfortunately, the public is not fully aware of the conditions. To the general public mind, the operator is a bandit, a robber, a man without any sympathy or feeling. He is pictured as sitting by gloating over his ill-gotten gain.

"We have an ex-Secretary of the Treasury, Mr. McAdoo, going on record with the most absurd and exaggerated statements of the profits of coal operators, coloring statistics, picking out isolated cases of enormous profits of operators. Dr. Garfield's statement, showing that the average margin of profit was 46c. a ton in 1917, of which the Government took 30c. a ton in the way of excess profit taxes, was ignored. If Mr. McAdoo believed his own statement of 2,000 per cent profits in this industry, one can be pardoned for wondering why, when he resigned from public life to make more money, he did not engage in the coal business, instead of the moving pictures—unless possibly he had in mind that the rap at the coal operators would some day make useful political capital.

"It is hard to chase down a lie, and it is a lie to pick one or two corporations out of the thousands that there are and accuse all the operators in the United States of being profiteers. It was under Mr. McAdoo's administration that the vicious practice of allowing assigned cars to certain operators to secure coal for less than a fair price as fixed by the Fuel Administration was practiced. If there were excessive profits in isolated cases, it was probable that they were due to Mr. McAdoo's own methods.

"And it was not until Dr. Garfield's attention was called to the policies of Mr. McAdoo's administration, as pursued by John Skelton Williams, followed up by Henry Spencer, that there was the slightest check put upon the Railroad Administration, and it then took an appeal to the President of the United States to temporarily check the unfair distribution of handling the coal car equipment of the United States. Contrary to the principles of this order, Mr. Watkins said, railroads now propose to continue the practice when the Lever Law passes out of existence. Unless there is some definite policy adopted by the Government that will prevent preferential car service, I fear it will continue to the point where it of itself will cause a great national strike, without the question of wages or other working conditions entering into it."

Late in the day Mr. A. G. Gutheim, assistant manager of the Car Service Section of the Railroad Administration, defended the practice of preferred car assignment, saying that it was justified by economic and commercial conditions. The commission today heard representatives of the public in the bituminous-coal controversy, going, among other things, into the manner in which the 14 per cent wage advance to the miners had been applied by the operators.

Chairman Robinson announced that Dr. Garfield, the former Fuel Administrator who had recommended the 14 per cent wage advance, this to be absorbed by the operators, had been invited to appear before the commission, but that no reply had come from him. George W. Elliott, representing the National Committee on Gas and Electric Service, which, he explained, represents public utility industries in affairs between themselves and the Federal Government, protested against utility corporations having to meet any increase in wages, through an advance in the price of coal. The utility corporations, he said, had understood that the 14 per cent advance was to be met by the operators entirely, without an increase in price to the consuming public. This, he said, was the inference drawn from statements made by Dr. Garfield, who suggested the 14 per cent advance as a basis of settlement of the coal strike.

Public Utilities Have to Pay 14 Per Cent

The National Committee on Gas and Electric Service, he said, had been informed that the 14 per cent advance had been absorbed by the operators as to contracts which had been made by them prior to the strike of last November. On these contracts, he was informed, he said, that the 14 per cent advance had been passed along. The matter had been taken up with the Attorney General, he explained, Mr. Palmer informing the public utility corporations that under the contracts prior to Nov. 1, the operators were privileged to raise the contract price to meet any increase in the cost of labor.

Ralph Crews, of New York, attorney for the operators, explained that the 14 per cent had been absorbed by the operators in all sales of coal except those under specific contract made before Nov. 1. "I am glad to hear that explanation," said Mr. Elliott. A. W. Brady, president of the National Traction Co., of Indianapolis; Charles L. Edgar, president of the Edison Electric Illuminating Co. of Boston; Paul Thompson, representing the Boston United Gas Improvement Co., of Philadelphia; and M. H. Aylesworth, of the National Electric Light Association of New York, all emphasized the point that if there is to be any increase fixed by the commission it will have to be passed on to the public.

Expected Price Advance Investigated Still Further

How any advance in the price of coal may be applied, as an outcome of the hearings before the Bituminous Coal Commission appointed by the President, has become one of the perplexing phases of the commission's inquiry. While the commission has not indicated that there is to be any advance in wages beyond the 14 per cent given the miners in December, or even that the 14 per cent advance is to remain, the coal operators have insisted that, even if the 14 per cent advance stands, something must be done to enable them to meet it.

Briefs filed with the commission by representatives of public utilities corporations in the Middle West and East emphasize the point that the "general understanding" has been that the 14 per cent advance was to have been entirely absorbed by the operators, so that no rise in the price of coal, due to the increase in miners' wages, would fall upon the public.

George W. Elliott, of Washington, D. C., representing the National Committee on Gas and Electric Service, has stressed the point that if there is any increase in wages, resulting in a higher price in coal to utilities corporations, the public will have to pay for it.

In their arguments before the commission the public utilities representatives from New York, Boston, Philadelphia and Indianapolis have stated that investigation develops that the 14 per cent wage advance has been passed on to the public by the coal operators on contracts entered into before the strike, which began on Nov. 1.

These contracts carried a provision, he explained, that any increase in the cost of labor would be met by an increase in the price of coal. Approximately 85 per cent of the coal output since the 14 per cent advance went into effect, Mr. Elliott said, had been sold under these contracts, the price being increased to cover it. Only on the remaining 15 per cent of the coal consumed, he said, was the 14 per cent absorbed by the operators.

Palmer Said Contracts Were Inviolable

Attorney-General Palmer was quoted by Mr. Elliott as justifying the action of the coal operators in applying the 14 per cent advance on coal delivered under contracts entered into prior to Nov. 1. The Attorney General maintained that the matter of putting the 14 per cent advance on the contract price of coal was entirely between the contracting parties.

Chairman Robinson has indicated that the question of how the 14 per cent ought to be applied is seriously engaging the commission, and that it will endeavor to arrive at some adjustment that will be satisfactory. The problem of the inability of coal operators to get an adequate supply of cars by which coal can be run to the markets has become another serious point of inquiry by the commission. Failure of the operators to get enough cars to ship coal has been argued by the operators as being one of the potent factors in the high cost of production of coal. While obliged to run the mines and keep up with the public demand for coal, the operators have pointed out that this necessitates keeping heavy forces at work, and large quantities of coal have been banked up at the mines with no way to get it to the public.

How Car Shortage Has Held Down Output

Through figures submitted by operators representing the Central Competitive field, which embraces two-thirds of the bituminous industry, it has been shown that the full time output of the mines has suffered greatly on account of car shortage. The percentage of output of coal that could not be sent to the market because of this car shortage was shown before the commission last week, as follows:

District	Per Cent
Western Pennsylvania	24.7
Ohio, Southern Field	32
Pittsburgh, No. 8	38.2
Illinois	26.8
Indiana	25.7

The average of output lost on account of car shortage since the week of Jan. 17 has greatly increased, the operators have shown, in the different fields. Chairman Robinson has asked for complete figures as to the effect of the car shortage upon the output of the mines and upon the irregularity of employment of the miners. In this connection Mr. Robinson has asked representatives of the public utilities corporations to submit their opinion on a proposal for storing coal during the summer months, so that it may be available during the periods when there is the heaviest demand.

Ohio Mine Workers Complain That Commodity Prices Are Too High

Flagrant profiteering is alleged by the coal miners of Belmont County, Ohio, who meet Prosecuting-Attorney William Dixon during the last week of the month when they will present their claims to him. Miners declare they will appeal their case to Governor Cox of Ohio in case the proscuting attorney fails to act. The Belmont miners state they have been investigating prices for some time and that their investigations show they are being gouged and that advantage is being taken of them because they are unable to buy in the larger markets.

Congress Urged to Enact Legislation Making Labor Contracts Legal

Miners' Contracts Are Mere "Scraps of Paper"—Figures Presented Showing Losses Due to Violation of Wage Agreements

The President's Bituminous Coal Commission was strongly urged on Feb. 28 by the operators of the Central Competitive Field to recommend to Congress the enactment of legislation which will make organizations of employees which enter into contracts of employment with employers legally responsible for the fulfillment of their agreements.

During the hearings before the commission the operators testified that the miners had shown an utter disregard for their contracts, so as to render them mere "scraps of paper." In spite of "strike-proof" contracts the number of strikes foisted upon the coal industry during 1918 and 1919 ranged from 102 to 140 in various states affected.

High Cost of Frequent Striking

Violations of the so-called Washington wage agreement of 1917, the operators have shown, resulted in losses in the production of coal running up into hundreds of thousands of tons, besides the heavy losses in wages to the men who went out on strike contrary to the contracts made by their official organizations. The loss in wages during the period of the recent strike alone, it is shown, approximated $100,000,000.

In briefs filed before the commission, the operators urge that the "future well-being of the coal industry and its usefulness to the American public" depend primarily upon the observance of contracts by the miners. For this reason, they say, they have formally asked the commission to give the matter consideration in its final adjustment of the controversy.

Amazing figures as to the number of strikes in violation of explicit contract have been put on record before the commission. The disregard of the mine workers' organization for these contracts impelled Philip H. Penna, of the Indiana operators, to tell the commission that, although he had been an advocate of collective bargaining, he would break with the unions and run non-union mines if he were able to do so. Mr. Penna spoke of the operators as having "no redress" against mine unions violating their contracts and urged that the matter was of sufficient gravity for Congress to take up.

A Few of the Miners' Self-Inflicted Losses

In the State of Indiana alone, during the year 1918, there were 140 strikes, a brief filed by the Indiana operators shows, resulting in a loss of 248,534 tons of coal which otherwise could have been produced. In 1919, the number of strikes was 105, with a loss in days of 318 and in tonnage of 291,535. These strikes cost the miners in wages over $640,000.

C. E. Maurer, an Ohio operator, has informed the commission that in the district of eastern Ohio there have been 102 strikes since the Washington agreement went into effect, involving 70 mines. This does not include the general strike of last November. The number of days lost by the men in these 102 strikes was 258 and the tonnage lost by these strikes was 329,700. In southern Ohio during the year 1919 the total hours' loss by reason of strikes was 20,088, while the tonnage loss was 109,207. Including the November strike, the loss in coal production for Ohio since April 1, 1917, Mr. Maurer has shown, was 2,687,132 tons.

The extent to which contracts have been violated in Illinois during 1918 and 1919 is shown in a brief filed by Dr. F. C. Honnold. In 1918 thirty-five mines of the Coal Operators' Association, Districts 5 and 9 were affected by strikes for 130 days; two mines of the Central Illinois Association had strikes for 8 days, and forty-four mines of the Illinois Coal Operators' Association encountered strikes for 79 days. The aggregate number of days lost by the men on strike in the three fields was 60,175.

During the first ten months of 1919 seventy-six mines in one district of Illinois, fourteen in another, and twenty-three mines in a third district had to struggle with strikes called contrary to agreements, with a consequent loss in days for all men out of 431,481. The general strike which began in November caused 35 days of idleness in the Illinois mines, stated Dr. Honnold, and was equivalent to 3,150,000 men being idle one day.

While mine workers' representatives before the Coal Commission have urged that what is known as the automatic penalty clause (or the docking clause—for failure of the mine workers to keep their agreements) be abolished, the operators, in their brief, say that it forms the only slight safeguard that now exists. The operators urge that, if anything, it be made even more stringent.

Wanted: An Unbreakable Wage Contract

"There is nothing that this commission can do of so much importance to the coal industry, present and future," says Mr. Penna in his argument, "as to make a contract that is a contract, a contract that the willingly disposed will respect and that other people will be compelled to respect."

Ralph Crews, of New York, attorney for the operators, in an argument before the commission, has pointed out that the so-called "check-off" system—which was originated at the instance of the miners' representatives and under which the operators deduct from the miners' pay envelopes an assessment that is sent on to the United Mine Workers of America—has utterly failed of the purpose for which it was intended—to enforce contracts. The operators ask that this system, through which the miners pay an aggregate of approximately $2,000,000 a year into the United Mine Workers of America coffers, out of their weekly wage, be abolished, as one of the acts of the commission.

The operators have seriously urged upon the commission that, if something is not done toward making contracts enforceable, the work of the commission, no matter what its verdict, is likely to come to naught, with nothing accomplished toward stabilizing the bituminous-coal industry. If any new contract that may be made, they point out, is to be broken at the whim of the unions, the operators will be at the "mercy of the miners," with disastrous results to the industry and a consequent disruption of coal supply to the consumer.

New River Miners No Longer Feel They Have A Grievance

The most important action taken by the miners of District 29, United Mine Workers, in their recent second annual convention at Beckley was a revision of the constitution for the district, by which it was hoped that it might be made a more workable instrument. The constitution was almost completely rewritten. The new constitution makes provision for a district-board membership of six instead of seven members, all to be selected through a popular vote. Under the old constitution two board members were elected at conventions and the balance by a popular vote. Hereafter, also, under the new constitution the biennial convention will be held on the second Tuesday in October instead of on the second Tuesday of February.

Though representatives of District 29 appeared before the U. S. Bituminous Coal Commission at Washington during the sessions of the biennial convention of District 29, they had no grievance to present in view of the recent restoration by the operators of the contract of Sept. 1 with its check-off feature. It was stated during the sessions of the convention that the relations between the miners and operators of District 29 are now on a satisfactory basis.

The contract of Sept. 1 now in force in District 29 provides that any increase which shall become effective in the Central Competitive field shall also automatically become effective in District 29. Consequently miners in District 29 are anxiously awaiting a report of the U. S. Coal Commission's findings.

What Miners and Operators Claim Bituminous Coal Commission Should Rule

President Lewis of the United Mine Workers, in summing up his final argument before the Commission, made the following points:

"1. All wage increases which the miner has received during the war period, including the 14 per cent increase fixed in the Indianapolis agreement, do not equal the increase in the cost of living, and the present wage of the miners is even more inadequate than the pre-war wage.

"2. The miners did not receive an adequate wage prior to the war and an increase proportionate to the increased cost of living would not place them on a just economic basis today.

"3. Increases of miners' wages have not kept pace with increases in other industries.

"4. The miners are entitled to a living wage, the principle that was enunciated by the National War Labor Board, proclaimed by President Wilson and affirmed by the laborers' guarantees of the Peace Treaty, a principle that is fundamentally just and that is universally sanctioned, not only by the enlightened opinion of our own country but by the civilized world.

"5. Regularity and continuity of employment constitute an economic right of the miners. A practical application of that principle can be secured by a shortening of the work day.

"6. Punitive overtime wage rates will tend to a more strict observance of the standard work day and the opportunity for more uniform employment.

"7. Increases in the cost of coal to the consumer have not been due to increased labor cost growing out of wage advances allowed to miners, but have been caused by excessive profits demanded and taken by the operators, and by the wholesale and by the retail coal dealers.

"8. Earnings and profits of the operators have been grossly out of proportion to the increased cost of production and the operators have not absorbed the 14 per cent wage increase fixed in the Indianapolis agreement but instead have passed it on to the public.

"9. Earnings of mine workers have been overstated and misrepresented by operators by citing exceptional cases."

Lewis Says Coal Has Been Sold Too Cheap

Mr. Lewis was assisted in his summing up by Secretary Green of the United Mine Workers. One of the points made by Mr. Green was expressed as follows:

"The trouble has been, in the mining of bituminous coal, that everyone, even the operators themselves, have regarded it as a cheap industry. They have felt that they must produce coal at such a ridiculously low figure and sell it at such a ridiculously low figure, so that the mines could be kept in operation. The selling price of coal now runs from $2.35@$2.45. In my judgment the American public and the coal-consuming public must be educated to the fact that this is a very small price for bituminous coal at the mine and that in all probability as the years go by in order to conserve the coal supply the selling price of coal will increase.

"The checkoffs, the installation of time clocks, and other like innovations would disturb the mining industry more than anything else. There are traditions that have grown up with the industry. There are rules and customs. If you attempt to change them you are introducing chaos, a condition which tends to lower production. It would be the same as to attempt to make an Irish Catholic embrace the Hebrew faith."

Mr. Guthrie, for the operators, introduced as a part of the record a statement showing savings and bank deposits in 28 mining towns. The statement, he held, reflects the financial condition of the community in which they are located. In referring to the claims of the miners as to the unhealthful character of their occupation, Mr. Guthrie said: "I heard Secretary Wilson say that he had swung a pick in a coal mine for 23 years. I am surprised that the mine workers do not use him as an illustration of the serious effect which it has on the physical condition of a man. I never have seen a more rugged, intellectual, vigorous man than Secretary Wilson."

A portion of the summing up for the operators was done by P. H. Penna. "I do not stand before this commission as any special pleader for the coal operators. I appear before you as a pleader for the coal industry of this nation, especially that of the Central Competitive Field.

"Regularity of employment is not a guaranteed right, and there can be no reason urged why the concession of such a right to the mine workers could not be advanced as a reason for granting the same to any other class of people in America, which is to claim that we are all entitled to regular employment whether the people require our product or not. We cannot make the mines run steadily, for the American people are going to have their fuel supply and have it when they want it.

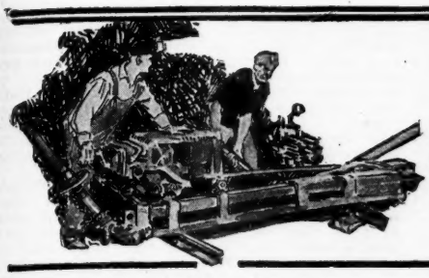
"Reducing the hours of labor is not going to change our occupation from a seasonal one to a regular and persistent one. If that reduction be effected and we continue to meet the wants of the people, it does not mean the elimination of the seasonal feature of our industry. It means more mines, larger investments, more men, and it means nothing else. Hence our output will be produced at a higher cost. The last analysis of the mine workers' demand is more money for less work. During January there were 21 strikes in 85 mines. Think of it, in the face of a contract that is strike-proof. In the part of December that we worked there were 18 strikes with a contract that is strike-proof. The mine workers have become special pleaders for the violation of contracts. I hope that this commission, if it does nothing else, will make contracts enforceable, force the parties to the contract to respect it. If any good has developed from the relationship which is known as 'collective bargaining' it is due to the fact that there was a period when contracts were sacred."

Ralph Crews made the principal summing-up speech on behalf of the operators, the following being the high lights in his discourse:

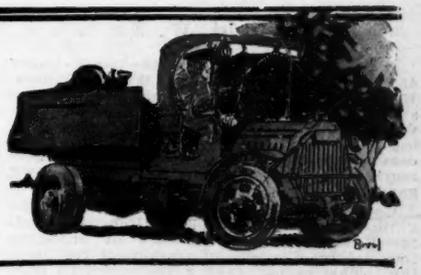
"Mr. Lewis states that the average earnings of the members of the United Mine Workers of America for a five-year period is some eight hundred odd dollars. This commission, I think, is interested in the average only to the extent that the average fairly and truly typifies the industrious miner. Mr. Lewis' figure is unimportant if that average to a material degree is affected by the presence on the payroll of men who for any reason, other than certain definite ones, do not work whenever the opportunity presents itself.

"The mine workers' organization can justify itself if it will get back to the men at the mines the realization of the fact that because there is work to do today there is no certainty that they will have work next week. If, to the best of their normal ability, they will do today's work utilizing the opportunity for labor as it presents itself, as men do in other industries, as men who succeed have done from the beginning of time, a suitable living can be secured."

S. D. Warriner, of the Anthracite Board of Conciliation, informs us that on March 9 the wage conference between anthracite operators and mine workers will take place at the Hotel Pennsylvania. The conference will decide on a scale to become operative on April 1. It may be recalled that on Aug. 22, 1919, the Tridistrict Convention called for a two-year contract, 60-per cent wage increase, a uniform wage scale, 6-hour day bank to bank, five-day week, time and a half for overtime, double time for Sunday, closed shop, payment for all work incidental to mining, employment while awaiting supplies, elimination of dockage and other concessions.



COAL AND COKE NEWS



What Happened in January

[The bracketed figures in the text refer to the number and the page of the volume in which references to the matter noted may be found and should the reader desire further information he can obtain it in the place indicated.]

Jan. 1—The Tennessee Coal, Iron & R.R. Co. does not renew contract with The Semet-Solvay Byproduct Co., at Ensley, Ala., when contract expires today [XVII, 69]—The G. B. Markle Co., of Jeddo, Pa., discontinues work at Highland No. 5, Jeddo No. 4 and Ebervale mines, while negotiating with Union Improvement Co., of Philadelphia, Pa., for renewal of lease [XVII, 153].

Jan. 3—The State Mining Board of Arkansas upholds Governor C. H. Brough in discharging T. H. Shaw as State Mine Inspector [XVII, 155].

Jan. 5—Thomas Lilley, millionaire coal operator, dies at his home in West Brownsville, Pa., aged 72 years [XVII, 155]—The Fayette County Mining Institute organizes at Mt. Hope, W. Va. Temporary officers are elected [XVII, 203]—E. Fred Wood, vice president International Nickel Co., dies suddenly in New York City [XVII, 292]—The American Expeditionary Force in France passes into history at midnight.

Jan. 6—J. C. Thomas, wealthy coal operator of Bramwell, W. Va., dies at his winter home at Miami, Fla. [XVII, 155]—By vote of 1,639 to 221 the convention of United Mine Workers of America at Columbus, Ohio, endorses the action of the officials of the union in agreeing to President Wilson's settlement of the strike.

Jan. 7—J. H. Wheelwright dies in Paris, France. One-page account of his life is given [XVII, 232]—W. P. Yeatman, coal operator of the Birmingham, Ala., district, dies at his home in Birmingham, Ala. [XVII, 203].

Jan. 12—President Wilson's Coal Commission begins its hearings at its headquarters in Washington, D. C., with Henry M. Robinson, representing the public, as chairman; executive secretary, M. H. Shenton; technical advisor, S. A. Taylor; counsel, A. C. King; director of publicity, K. C. Adams.

Jan. 14—The Federal Trade Commission's report on the cost of producing anthracite coal is made public [XVII, 279]

Jan '15—J. C. Norwood's resignation is effective today as state mine inspector. He returns to University of Kentucky as head of the Department of Mines and Metallurgy [XVII, 30]—Smokeless Coal Operators' Association of West Virginia holds important meeting at Bellevue-Stratford Hotel in Philadelphia, Pa., regarding car supply [XVII, 203].

Jan. 19—T. W. Guthrie reviews history of miners' lamps before the President's Coal Commission at Washington, D. C. [XVII, 234]—The operators of the Central Competitive field reply to the demands of the miners, before the President's Coal Commission.

Jan. 20—Frank Farrington testifies regarding clean coal before the President's Coal Commission at Washington, D. C. [XVII, 235].

Jan. 23—The U. S. Senate adopts amendment to Kenyon Americanization bill requiring aliens and citizens alike between 16 and 21 years of age who are illiterate to attend classes of instruction 200 hours yearly.

Jan. 24—All miners at mines of the New River Co., in southern West Virginia strike for "check-off" system establishment [XVII, 277].

Jan. 26—Four hundred Kansas miners go on strike because of the passage of the Industrial Court bill [XVII, 236]—Thomas F. Holmes, general superintendent of the Chicago, Wilmington & Franklin Coal Co., of Illinois, dies at Springfield, Ill. [XVII, 314].

Jan. 27—Don Rose represents the operators of the Freeport district of Pennsylvania before the President's Coal Commission [XVII, 275]—The President's Coal Commission reaches important part of its deliberations; considers statistical data [XVII, 276].

Jan. 27 and 28—Voluminous statistical material is presented to the President's Coal Commission. Van Bittner makes extended argument in connection with this data [XVII, 277].

Jan. 28—Officials of the United Mine Workers of America announce that conferences with anthracite operators will probably start on Feb. 15 regarding new agreement [XVII, 277].

Jan. 30—John L. Lewis, acting president of the United Mine Workers of America, takes personal charge of the movement to unionize southern West Virginia [XVII, 317].

Indiana, Pa.

New office building at Indiana for Clearfield Bituminous Coal Corporation. To discontinue offices, at Clearfield and Clymer. Details of new building. Prominence of the Clearfield corporation. Properties noted.

On April 1 the Clearfield Bituminous Coal Corporation will move into its new office building at the corner of Eighth and Water Sts., Indiana, Pa., which will contain the general offices of the company. The offices and office employees at Clearfield, Pa., and Clymer, Pa., will be moved to Indiana and the offices at these two places discontinued.

The new office building is a two-story structure of brick and stone and represents an expenditure of $80,000. On the first floor will be the offices of General Manager H. B. Douglass; General Superintendent H. J. Hinterleitner; also offices for the general purchasing agent, the superintendent of materials and supplies, two offices for private secretaries, two rooms to be occupied by the auditing department and a large pay-roll office. On the second floor are the offices of Chief Engineer Fred K. Prosser; also offices of the manager of the real estate department, the manager of the forestry department, as well as a large draughting room, which is lighted from overhead by skylights, and a modern blue-print room.

The architects of this building were Howard & Hatchin, of DuBois, Pa. The building contractors were John W. Cowper & Co., of Buffalo, N. Y. The building is to be heated by a steam plant installed by E. W. Webster & Co., of DuBois, Pa.

The Clearfield Bituminous Coal Corporation is one of the largest producing companies of central Pennsylvania, owning about 200,000 acres of coal land in Indiana, Cambria and Clearfield counties. The company operates large mines at Rossiter, Spangler, Clymer, Dixonville, Peale and Commodore. The Commodore operation is in the course of construction and when completed will be one of the most modern mines in the country.

The company has purchased several houses and lots in Indiana and will make every effort to accommodate all its men in its own properties. The new office building is a valuable addition to the many beautiful buildings in Indiana. It is planned to furnish the basement as a club room for the office employees within the next year.

Charleston, W. Va.

Mines on Chesapeake & Ohio operate less than three days out of six. No early improvement expected. Few cars being returned from western centers. Operators believe cars are held at certain points loaded with coal. Serious operating conditions in New River field. Kanawha coal diverted for use on Pennsylvania R.R. Ban on exports.

Limited production of coal again followed in the wake of a car shortage along the line of the Chesapeake & Ohio R.R., in this part of the state, in the weekly period ended on the twenty-first. The inability of the Chesapeake & Ohio to furnish cars cost mines in this section fully 50 per cent of potential capacity. The daily average in cars available to all mines on the system was only 1,300 cars, which, as may be imagined, did not go very far toward keeping mines supplied with enough cars to continue in operation.

Owing to poor transportation facilities, most mines were being operated less than three days out of six. No improvement in car supply is counted upon by railroad officials, who claim that weather conditions have not been such as to insure the return of any greater number of cars from western centers. There continues to be a strong belief among operators in this section, that coal cars are being purposely held at certain points loaded with coal. Exports from certain fields in this area are still shut off. It is claimed that if tidewater shipments were larger the short haul would insure a better car supply. Confiscation of coal from this section continues, and what producers are unable to understand, is why such coal should be seized for the Pennsylvania R.R., when that line has sources of supply nearer home. Such a policy has aroused indignation.

New River Operates at a Loss

Insight into the adverse conditions, under which mines of the New River field were laboring, throughout the third week of the month, may be gained when it is stated that during the latter half of the week, the average daily production of all the mines in the New River field on the Chesapeake & Ohio was just a little above 12,000 tons a day. The limited car supply was still holding mines back to about 50 per cent production. Few of the mines in the field were operated so much as half the week.

It is said that the general idleness, resulting from the miserable car supply, has been the leading factor in making it hardly possible for most mining companies to meet expenses. In fact it is stated that many of them have been operating at a loss since January first; the strike, Government control and then a car shortage, all knocking the props out from under production, have deprived operating companies of any chance of realizing any return on their investment in recent months. While New River tonnage for bunkering continues to move in fairly large quantities, the permit system is still restricting export shipments to a great extent from the New River field. The epidemic of influenza in the field is now rapidly abating.

Kanawha Works Half Time

While Kanawha mines found a fairly adequate supply of cars awaiting them, at the beginning of the third week of the month, being able to load 25,000 tons on the sixteenth, cars were decidedly scarce during the remainder of the week, growing less and less in number as the week grew older. Unable to secure cars, mines were forced to shut down, the average working time at most mines being about three days (or even less) out of the six. No factor other than railroad disability was responsible for a production for the field as a whole amounting to about 50 per cent of potential capacity. Even the tonnage which was produced was failing to reach the destination to which it was consigned, because the Railroad Administration was helping itself liberally to the Kanawha product, in order to furnish coal for the Pennsylvania R.R., and the very best grades at that. Kanawha coal is still under the ban as far as export shipments are concerned. Steam and gas coal from this field are at a premium.

Bluefield, W. Va.

Average car supply for the week under 45 per cent in southern West Virginia. Hundreds of idle cars standing empty on side-tracks. West Virginia coal still diverted for Pennsylvania R.R. use. Winding Gulf feels influenza and scarcity of cars. Tug River output reaches low-water mark. Pocahontas production on down grade.

Coal companies in southern West Virginia in the third week of February suffered acutely from the lack of anything like a proper supply of equipment for loading. This period, taking the southern part of the state as a whole, was worse from a production standpoint than any other week in the month, conditions closely resembling those prevailing about the middle of January when loadings sank to such a low level. The average car supply for the week was believed to be under 45 per cent; over that mark in some fields and in others considerable under it. The effect of such a car scarcity was to materially cripple operations. Some railroads in fact were able to furnish only enough cars to keep the mines going for two days out of the week.

Southern West Virginia operators declare, from personal observation, that there are hundreds of empty cars standing idle on side-tracks west of the Ohio River. If such cars had been side-tracked for repairs, little repair work was being done on them. Operators generally strongly condemn the Railroad Administration for permitting such cars to remain idle when there is such a crying need for them.

To add to other troubles, experienced by operators in the southern part of the state, the Railroad Administration still persisted in its course of permitting confiscation and diversion of high-volatile coal for the use of the Pennsylvania R.R. hundreds of miles away. A vigorous protest was made to Washington, it was understood, against the seizure of coal for a road with bituminous coal available on its own line.

Winding Gulf Yard Crews and Miners Being Laid Off

The car supply in the Winding Gulf region, for the week ended the twenty-first, was almost a complete failure. Mines dependent upon the Virginian Ry. for a car supply, were forced into idleness during four days out of the six. In fact cars had become so scarce that yard crews were without work and miners were also being laid off at many plants while several operations had to suspend altogether owing to the prevalence of influenza and the scarcity of cars. Railroad trainmen, commenting on the condition of rolling stock, censure the Railroad Administration for its failure to see that the rolling stock on various railroads was kept up. That transportation conditions on the Chesapeake & Ohio, in the Winding Gulf field, were little better than those on the Virginian, was shown by the fact that mines were able to work only about three days out of the six during the third week of February.

Tug River Output on Down Grade

In the Tug River region, for the week ended the twenty-first, mines were able to load only 58,000 tons of coal, production dwindling almost to the low-water mark of Jan. 15. Throughout the week production was on the down grade, only 46 cars in the entire region being available for loading on the last day of the week, the twenty-first.

Report is made by several Tug River operators of a large number of empty cars standing in idleness on sidings west of Columbus. One operator, while going west from Columbus recently on the Pennsylvania R.R., observed several hundred empty coal cars along the side-tracks for a distance of 90 miles west of Columbus. While it was presumed that most of the empty cars observed were side-tracked for repairs, yet only two repairmen were seen at work. Such a condition of affairs is held by West Virginia operators, as being largely responsible for the present unsatisfactory transportation conditions. It is taken for granted that what is true as to the empties on one road, is also true as to empties on other roads.

Production in the Pocahontas region was decidedly on the down grade during the third week of the month, due to the great dearth of cars. During this period, mines failed to receive half-enough cars. As a matter of fact the supply was just about 45 per cent, and most mines received cars sufficient to keep them busy only about three full days Not only the car shortage but a continuance of the policy of confiscating coal at Bluefield scales for the Pennsylvania, contributed to the rather gloomy outlook. Incessant rains and snow storms had resulted during the week in high water, which was affecting operations (such as they were) to some extent. While much Pocahontas coal was going to tidewater, the permit system interposed a barrier between the mines and large foreign shipments; although a heavier demand than ever was said by operators to exist both in foreign and domestic markets, for Pocahontas coal.

Huntington, W. Va.

Logan production 40 per cent of capacity. Miners work on holidays, with cars available. Influenza does not interfere with output. Tonnage gain on Chesapeake & Ohio lines.

With two hundred cars less in the field during the week ended Feb. 21, production slumped in the Logan field, amounting (it is estimated) to about 162,000 tons, as against 172,000 tons during the previous week. Conversely, there was an increase in the railroad-disability loss which was not far from 250,000 tons. In other words, nearly 60 per cent of the potential production of all the mines in the Guyan field was being lost, merely because of the inability of the mines to secure cars, production being little more than 40 per cent. Neither labor loss, mine-disability loss nor all other losses combined amounted to much more than one per cent. Insufficient motive power, during the third week of the month, interfered to some extent even with such shipments as it was possible to make to tidewater, and it was feared that congestion, as a result of such a power shortage, might result in an embargo.

All the mines in the field had a supply of cars on the twenty-third or at the beginning of the fourth week of the month, and consequently production was speeded up as much as possible on that date, even though it was a holiday, in order to take advantage of the empties furnished. As a matter of fact, Logan miners are paying little heed to holidays now, in their anxiety to earn as much as possible, since a full day's work is seldom possible under present transportation conditions.

There are still a good many cases of influenza among the miners of the district, but the epidemic is not so prevalent as to interfere with production.

While there was a gain in the total tonnage of coal transported by the Chesapeake & Ohio during the week ended Feb. 21, the gain was quite slight, amounting to only 190 cars or to about 9,500 tons. In the third week of February, the road handled a total of 10,215 cars of coal or approximately 510,750 tons, as against 10,025 cars or about 501,250 tons handled during the preceding week.

Fairmont, W. Va.

Worst car shortage in the history of northern West Virginia fields. About 25 per cent car supply. Each railroad collecting its own equipment before return to owners. Nearly all northern West Virginia coal going east. Miners insist on further increase in wages.

Never in the history of the Baltimore & Ohio R.R., nor in the history of the Fairmont and other northern West Virginia regions, was there a worse supply of cars than during the week ended Feb. 21. Not even during the severe winter of 1917-18, when there was a transportation breakdown in connection with adverse weather conditions, was the supply of empties so low as it was in northern West Virginia during the third week of the month. There were one or two days during that week, in fact, on some roads when the supply disappeared altogether.

During the greater part of the week there was not over a 25 per cent car supply, and about the middle of the week the supply had dwindled to about 13 per cent. Production was practically paralyzed Most of the mines in the northern part of the state were idle probably about two-thirds of the week, few if any mines being able to work as much as two full days. Mines fortunate enough to secure any cars at all received a supply so far below requirements that such a supply only lasted a few hours.

The third week of February ranked as probably the least productive in the history of the field. As showing how scarce cars were in some parts of northern West Virginia during the week, mines on the Monongahela R.R. on the seventeenth and twentieth were without any cars at all, and no coal trains were operated on those days.

As every road is bent upon collecting its own equipment, to the greatest extent possible, before the return of railroads, and as the Baltimore & Ohio road is sending more equipment off its line than it is receiving, therefore officials of the road fear an even larger deficiency in the car supply. Instead of any relief from the car shortage being in sight, there is a prospect of even worse shortages than have been witnessed in recent weeks.

Confiscation is still frequent in northern West Virginia and no class of coal shipment appears to be immune from the long arm of the roads, coal being seized when and where the railroads see fit to take it.

Little or no coal is being shipped to Curtis Bay and on the twenty-first an embargo on shipments both to St. George and to Arlington piers became effective, the embargo covering the period ending on the twenty-fourth While nearly all the tonnage from northern West Virginia is being transported to the East, yet a small proportion was still being consigned to Ohio and Michigan points during the week ending the twenty-first.

Work has become so scarce in northern West Virginia mines, as a result of the car shortage, that miners are more insistent than ever for further increases in pay, to bridge them over such periods of dullness as are now being experienced in the northern part of the state.

Ashland, Ky.

Northeast Kentucky speeds up production. Output 53 per cent of capacity. Chesapeake & Ohio plants operate 3½ days in the week; Louisville & Nashville mines work only 2½ out of six. Car-allotment commission making mine-rating survey. Railroad confiscation of coal works hardship.

With more cars available on the Chesapeake & Ohio and its branch lines in northeast Kentucky, the mines in that field were able to speed up production somewhat during the third week of February; although in the field as a whole, only 53 per cent of potential capacity was realized in the output of coal, potential production for the period in question being (according to railroad figures) 235,000 tons. Even with conditions somewhat improved there was still a heavy production loss—112,545 tons or 47 per cent—all but about 3,000 tons of such loss (or 109,000 tons) being attributable to a shortage of cars.

Still, mines on the Chesapeake & Ohio and its lines were able to work about 3½ days during the week, a marked improvement over previous weeks; it being the third week of the year, in fact, in the northeast Kentucky territory. While Chesapeake & Ohio coal plants had a supply sufficient to keep the mines going fairly well for the period stated, on the other hand mines on the Louisville & Nashville were able to operate only about 2½ days, it being the first time in recent weeks that the Chesapeake & Ohio road has surpassed the Louisville & Nashville as regards car supply.

Producers in the northeast field are still bending their energies toward securing an increased rating for mines in this territory; they believe they are entitled to this rating, owing to the extension of plants and the increased working forces available. While at first denied such an increase in rating, the Chesapeake & Ohio car-allotment commission is now making a special survey of conditions at various mines, to determine whether or not mines are entitled to an increased allotment over last year. The practice of deducting from the car supply at a time when cars are scarce for "overage," has been discontinued, it is reported, as a result of vigorous protests filed with the Railroad Administration.

Confiscation of coal produced in the northeast Kentucky territory, for the use of the Chesapeake & Ohio, is being continued at great inconvenience to producer and consignees, preventing an uninterrupted flow of coal to industries greatly in need of coal at this time. Owing to the restricted car supply, northeast Kentucky mines still found it impossible, during the week ended the twenty-first, to supply all the coal for which there was such a stiff demand, all grades being included in the demand.

Norton, Va.

During car shortage, Virginia mines coke or store 30 per cent of output. Influenza beginning to affect production.

While production in the southwestern Virginia fields was increased about 2,000 tons during the week ended the twenty-

first, as compared with the previous week, yet on the other hand production losses were heavier, reaching 67,000 tons, or 15,000 tons in excess of losses for the week ended the fourteenth. All but about one per cent of the losses were attributable entirely to car shortage.

There would have been a much heavier production loss, in fact, if the mines had depended upon a car supply in order to get out coal. Indeed, it is estimated that if the mines had waited for empties, the production loss would have shot upward to 60 per cent of capacity. Instead of depending upon the car supply, 30 per cent of the product of the various mines was either placed in coke ovens or stored.

Although several months have elapsed since the strike ended, Virginia operators have more than $100,000 outstanding, due them for coal diverted during the strike, and a good deal of trouble is being experienced in reducing the amount still in arrears.

The prevalence of influenza in the Virginia fields was beginning to affect production somewhat during the third week of the month. There were, at the end of that week, 3,000 cases of influenza in the field. The death rate, however, was not over one per cent.

Benton, Ill.

Interest in Hamilton County developments. Prominent coal concern contracts to drill very large territory in near future. To take over big acreage on satisfactory test.

Much interest is being shown in the developments now going on in Hamilton County of this state, where options have recently been taken on quite a large acreage of coal land. No serious effort has ever been made to determine the amount and quality of coal in Hamilton County, although it is almost surrounded by some of the biggest producing counties in the southern Illinois field.

H. M. Rea, a well known capitalist of Franklin County, who has done much toward securing the development of the coal industry in that section, is said to have recently closed a contract in Chicago with one of the largest coal interests in the country, by which the prospective purchaser has contracted to drill out practically the entire southern half of Hamilton County.

Drilling is to begin in this section as quickly as outfits can be placed on the ground, and will continue until a thorough test has been made. The prospective purchaser wants to buy quite a large coal acreage, and therefore intends spending a large sum so as to know positively what thickness and quality of coal underlies this territory. If the quality of the coal and the thickness of the seam are satisfactory, the company is said to have contracted to purchase not less than 25,000 acres, and will probably take over a much larger acreage.

As evidence of good faith and a guarantee that it will drill at once, the operating company has deposited $10,000 in one of the McLeansboro banks. Under the terms of the contract the company must begin drilling at once, but it has until the first of next year to take up the options.

Victoria, B. C.

Settlers' Rights Act disallowed. Conflicts with terms of Order-in-Council. Controversy of importance to British Columbia coal-mining industry. Cassidy collieries in litigation. Recent Order-in-Council decides public domain taken must be promptly developed.

The Settlers' Rights Act of 1919, passed by the Legislative Assembly early in that year, and which did not receive the signature of the Lieutenant-Governor pending advice from the Ottawa authorities, has been disallowed by the Dominion Government. The position taken by the Federal authorities is that the legislation is in conflict with the terms of the Order-in-Council, under which the Settlers' Rights Act of 1917 was vetoed. It is considered likely that the provincial Government will ask the Legislature to re-enact the measure, its stand being that nothing is proposed under its authority that is not well within provincial administrative rights.

To those interested in the coal-mining industry in British Columbia, the issue of this controversy is of importance. The Act of 1917, which was not disallowed before a number of Provincial Licenses had been issued, is responsible for the opening of the Cassidy collieries of the Granby Consolidated Mining, Smelting & Power Co., Ltd. These licenses, under which the Granby company is operating on Vancouver Island, now are the subject of litigation. The Settlers' Rights Act of 1919 extended the period, in which pioneer settlers within the Esquimalt & Nanaimo Ry. belt, or the descendants or legal heirs of old-time settlers, could obtain title to the coal rights within the area of their realty holdings.

The Government of British Columbia has passed an Order-in-Council reserving for the people all the unalienated coal lands within the province. This means that hereafter staking under the Coal and Petroleum Act is forbidden. Hon. T. D. Pattullo, Minister of Lands, explains that it is the definite policy of the Government to put an end to alienation in respect to coal lands as already there are coal-bearing areas, to which Crown Grants have been issued, which are being held out of production merely for speculation. He adds that it is proposed that use is to be the basis of all British Columbia alienation policies. This is taken to mean, in the case of coal for instance, that no part of the public domain may be taken up by individuals or corporations, unless satisfactory guarantees are forthcoming, that it is their intenion to take immediate steps to make it productive.

PENNSYLVANIA

Anthracite

Scranton—Building operations to reconstruct the Manville breaker of the Hudson Coal Co., at this place, have just been begun. The Manville has been idle about four years and during that time all of the former machinery has been removed and shipped to different points. It was at that time decided to run the coal from the Manville through the Dickson shaft to the Von Storch breaker for preparation, but since the recent sale of the Von Storch to the Acker-Conklin interests, it has been found necessary to make other arrangements. The Manville will now be known as a "concentration plant," in which all coal from the Manville and Dickson collieries will be prepared for market. It will be entirely modern and although the exterior will not be materially altered the interior will be changed considerably to suit the requirements of new machinery. The building is to be strengthened throughout. The company, while utilizing the Von Storch breaker for preparing coal, has found it necessary at times to ship partly prepared coal to Carbondale for final preparation, but the re-opening of the Manville will relieve this necessity and extra cost of shipping. The Manville is the only Hudson company breaker in the Green Ridge section now, the nearest to it being the Marvine says the *Scranton Times.*

Bituminous

Pittsburgh—Work has begun on extensions to the mining laboratories of the Carnegie Institute of Technology, here, which when completed, it is said, will afford the school the most thorough equipment of its kind, in the country. The tentative plans approved include the additions of a laboratory for work and research, elements of mining machinery, electrical applications in mining, coal and ore dressing, mine models and practical demonstrations. Arrangements have been made by Mr. Steidle, professor of mining engineering at the institute, whereby the equipment, in the way of mining machinery, for the new laboratories will be furnished as a loan by some of the manufacturers of this type of machinery.

WEST VIRGINIA

Wheeling—The annual meeting of the stockholders of the Hanover Coal Co. was held at Bellaire recently. A board of directors was elected, which met and elected the former officers. The company has 1500 acres of coal land in Washington County, Pa., where it operates stripping mines. The company has an authorized capital stock of $500,000 and is one of the biggest stripping mine companies in the central field.

Bluefield—Virtually every company in the Pocahontas field was represented at the annual meeting of the Pocahontas Operators' Association held in this city on Feb. 21, the principal business at such meeting being the election of officers. All the officers were re-elected as follows: Isaac T. Mann, president; L. E. Tierney, vice president; Jairus Collins, treasurer; W. E. Koepler, secretary. President Mann was present and presided at the meeting. The ment of the various executive committees president expects to announce the appointin a short time. Aside from the election of officers, only the usual routine business was transacted although transportation problems as well as the payment for coal confiscated came in for a share of discussion.

Although at one time an important industry in the Pocahontas field, the production of coke in that region is steadily on the decline, as shown by the figures covering the output for 1919 and the years immediately preceding. Only 493,503 tons of coke were shipped from the Pocahontas district in 1919, the shipments by months being as follows: January 98,858; February 68,803; March 54,160; April 33,368, May 29,902; June 22,238; July 18,876; August 32,064; September 33,295; October 35,127; November 36,367; December 35,345. As there was a coke production of 1,272,707 tons in 1918, the 1919 production represented a 60 per cent decrease. Going back to 1917, there was then a production of 1,495,329 and in 1916 the coke shipments aggregated 1,355,646 tons. However, there appears to have been a steady decrease in coke production in the Pocahontas region ever since 1910 when 2,084,023 tons were produced.

Within a few years it is believed that little or no coke at all will be produced in the Pocahontas field, it being unprofitable to manufacture coke in that region because of the fact that the coal itself has become so valuable, although Pocahontas coke is of such a high quality as to command high prices. The bulk of the coke made in the region is produced by the United States Coal & Coke Co. and is used at western plants of the United States Steel Co.

OHIO

Toledo—The congestion at the Toledo gateway which has been holding up coal transportation for months was temporarily relieved recently by the movement of a number of cars into Michigan territory. Producers and shippers in Ohio and West Virginia began to feel better over the situation but soon afterward additional embargoes were announced and the situation is now as bad as ever. Because of influenza among train crews, wide distribution of cars during the suspension and cold weather, there is little hope for immediate improvement in the Toledo situation.

Columbus—Steps are being taken to put into effect the recently enacted law compelling all operators in the state to provide wash houses for their employes after April 1. This law is receiving the support of operators generally, and already many have started to erect such facilities. In many cases the larger operators will provide shower baths for their men in large permanent buildings. Many of the houses will be put into service previous to the first of April.

One of the largest coal deals in central Ohio, which has taken place for some time, was consummated recently when all of the properties, which have been controlled by H. H. Heiner and George H. Barker of the Maynard Coal Co., of Columbus, were merged under that name. The properties consist of three large mines, in the Pomeroy district and one in the Jackson district operated by the Maynard Coal Co.; also three large mines in eastern Kentucky operated by the Daniel Boone Coal Co. and the Superior Coal & Dock Co., of Duluth. The authorized capitalization of the company has been increased to $2,300,000. The reason for the merger is to secure more centralization in the management of the various properties.

INDIANA

Terre Haute—Mines in the Terre Haute district are working only three days on an average. In several cases of mines located on the Chicago, Terre Haute and Southeastern R.R., the car shortage has been most acute, many men not working more than one day a week for a number of weeks. The average weekly wage of those who have worked, it is said, is only $18. Eighty-one mines were reported closed one day recently on account of car shortage. The total average daily production of the closed mines is more than 60,000 tons. The shutdown represents a considerable loss to the miners in wages.

The coal mines in Indiana produced 19,327,795 tons of coal during 1919, which was about 10,000,000 tons less than in 1918. These figures have just been compiled by the Indiana Coal Trade Bureau. The miners worked 214,753.11 hours. The miners lost 31,501 hours because of car shortage; 13,206 hours because of labor troubles; 13,525 hours because of mine disability; and 140,206

hours because of "no market." The number of mines along the various railroads and the coal tonnage produced by them in 1919, respectively, follows: Big Four, five mines, 641,380 tons; Baltimore & Ohio Southwestern, three mines, 257,992 tons; Chicago & Eastern Illinois, 47 mines, 5,517,481 tons; Chicago, Indianapolis & Western, one mine, 57,510 tons; Central Indiana, three mines, 55,528 tons; Chicago, Terre Haute & Southeastern, 38 mines, 3,632,519 tons; Evansville & Indianapolis, 14 mines, 756,486 tons; Illinois Central, six mines, 447,136 tons; Monon, 21 mines, 1,518,353 tons; Pittsburgh, Cincinnati, Chicago & St. Louis, 42 mines, 5,163,633 tons; Southern, 20 mines, 1,078,628 tons; Evansville & Eastern, two mines, 44,137 tons. The mines reporting to the Coal Trade Bureau represent about 85 per cent of the total tonnage in Indiana.

ILLINOIS

Carlinville—The new tipple at the mine of the Carlinville Mining Co. has been erected and the mine is now able to supply all demands for coal. The mine did a prosperous business in 1919 and a good business is expected for 1920. The mine has been handicapped by poor roads to and from the mine but the owners of the mine hope to arouse enough public interest this year to correct this defect.

Benton—The car shortage continues to be serious in the entire southern Illinois field. However, those in active charge of operations at the mines state that railroad officials are holding out a promise of an early improvement. Mines in this region, since the first of the year, have not been averaging 50 per cent running time. There is still an undercurrent of dissatisfaction among the miners, but should the car supply improve sufficiently to permit of steady work, it would do much to quiet the unrest.

Hillsboro—A deed was filed at this place in Montgomery County, Illinois, recently, the consideration on which was $5,849,740.13. The deed was made by Geo. C. Van Tuyl to the Indiana & Illinois Coal Corporation, and it conveys the coal mines, coal properties, etc., formerly owned in Montgomery and other counties and known as the Peabody mines. At the time the transfer was made the properties were owned by the Chicago & Eastern Illinois R.R. The mines are located at Taylor Springs, Kortkamp, Witt and Nokomis, Illinois. The Illinois & Indiana Coal Corporation owns and operates ten mines and other coal properties will probably be added to the list of holdings, according to well founded rumors.

Springfield—The Illinois State Utilities Commission recently authorized a bond issue of $530,000 to be used in the construction of the Marion & Eastern R.R. from Marion to Harrisburg, or near that city. It will be a coal carrying road, and will open up the vast coal field in the eastern part of Williamson and western Saline counties for development. Some of the richest coal lands in southern Illinois are said to lie in the section which will be reached by this road. The Madison Bonding Co., of Chicago, has agreed to underwrite the bond issue, and representatives of the company were in the territory of the proposed route recently on a tour of inspection. It is not known just when actual building operations will start, but development will be pushed as rapidly as possible.

Duquoin—The Security Coal & Mining Co., of Chicago, operating the Security mine three miles south of here, has started the work of construction on a large rescreening plant. The work of putting in the foundations has been completed and it is expected that by April 1 the new plant will be in operation. All of the plans were made by engineers of the Link-Belt Co., of Chicago, and all shaker screens and conveyors will be constructed under their supervision. Aside from the regular five sizes which the operation now produces, the new screening plant will add No.'s 1, 2, 3, 4 and 5 nut coal to the output. The total cost of the new plant will be in the neighborhood of from $30,000 to $35,000.

The car proposition is most serious in this field, the mines hardly averaging 2½ days a week. The only source of car supply comes from the Illinois Central R.R. and for some reason the company seems to be unable to get cars moved around fast enough to give the mines even half running time. During the first week in February the Majestic and Security mines, two of the largest in this field, worked only 17 hours in the six days. This is said to be the worst record which has been known of in southern Illinois with the present market conditions. At present no hope of the situation improving is held out.

Personals

D. S. Wolfe of Jeanesville, superintendent of the Lehigh Valley Coal Co.'s Lehigh division resigned to go with McTurk & Co., Girardville, Pa. No successor has been appointed.

A. S. Winter, formerly connected as advertising and sales manager for the William Powell Co., has joined the sales force of the Fairbanks Co., of Pittsburgh, Pa., and will represent them in southern Ohio.

T. O. Sloan, who has been with the Peabody Coal Co. for some time at mine No. 19, in Franklin County, Ill., has been made traveling auditor of the company with a territory comprising all of southern Illinois.

Scott Stewart, general manager of the W. J. Rainey company and vice president of the Rainey-Wood Coke Co. has been elected vice president and a member of the board of directors of the Matlack Coal & Iron Corporation.

John Lloyd has resigned from the position of efficiency engineer of the Lehigh Valley Coal Co., Wilkes-Barre, Pa., to accept the position of manager and efficiency engineer with the Perolin Co. of America, with headquarters in Wilkes-Barre.

Leslie W. Sydnor, who was formerly representative of the Eastern Coal & Export Corporation, has been appointed as assistant to E. J. Payne, president of the Lake & Export Corporation, which was recently organized at Huntington, Ill.

A. W. White, for the past several years superintendent of Greensburg No. 1 mine of the Keystone Coal & Coke Co., has been transferred to the Keystone shaft, Madison field, where he becomes superintendent of the Keystone shaft, Madison, Arona and Sewickley mines of that company.

J. F. MacFarland, for a number of years sales manager for the O'Gara coal properties, in the Harrisburg field of southern Illinois, has resigned from that company to accept a position as sales manager of the Indiana Coke & Gas Co., at Terre Haute, Ind. Mr. MacFarland is well known to the gas and coke trade in the Middle West.

J. C. Thompson, a mine inspector for the Consolidation Coal Co., was perhaps fatally injured recently when he fell while attempting to mount the steps of a slowly moving train at Murray to come to Fairmont, W. Va. He slipped and fell, sustaining a concussion of the brain, a broken leg and elbow, and serious injuries to his back. He is in the State hospital at Fairmont.

Robert Medill, formerly with the Peabody Coal Co., at Harrisburg, Ill., has been appointed to fill the vacancy of general superintendent at the large mine of the Union Colliery Co., at Dowell, Ill., known as the Kathleen mine. The vacancy was made late in January when Edward Bottomley resigned and went west to go with another company.

Fred Bateman, who for the past four years has been mine foreman at the Walston No. 3 mine of the Rochester & Pittsburgh Coal & Iron Co., has been transfered to the large Adrian mine of this company located at De Lancey, Pa., where he holds a similar position. The former mine foreman at the Adrian mine has been promoted to the position of superintendent of the Walston No. 3 mine, succeeding John Rudolph resigned.

Frank E. Pomeroy has been employed by the Chicage Coal Shippers' Association as field secretary. Mr. Pomeroy has spent practically all of his life in the coal business. He was born in southern Illinois, and was connected with Franklin County operations; leaving this field he went to Chicago and entered the sales end of the industry. Mr. Pomeroy has had selling experience in Indiana, Michigan, and throughout the Northwest, coming in contact with all of the different kinds of coal produced, and sold, in the Middle West.

F. M. Nourse has joined the Charles L. Benjamin organization at Chicago. Mr. Nourse has been an engineer in the advertising department of the Cutler-Hammer Manufacturing Co., at Milwaukee, Wis., for the past two years and prior to that was associated with the Wisconsin Power, Light & Heat Co., at Portage, Wis. He is a University of Illinois graduate in electrical engineering. The Benjamin organization makes a specialty of trade and technical advertising, and Mr. Nourse's new duties will consist of preparing technical advertisements and literature for the company's clients.

G. P. Troutman, for six years assistant to the general manager of the G. B. Markle Co., resigned effective March 15. He goes to the Wentz allied companies as general superintendent.

Robert D. Tonkin, lumber and timber expert and formerly timber estimator for the Rochester & Pittsburgh Coal & Iron Co. and allied interests, has been made manager of the forestry department of the Clearfield Bituminous Coal Corporation, with headquarters at Indiana, Pa. This company owns 25,000 acres of surface lands, several thousand of which are timbered. It is the intention to plant several hundred acres of this land in new timber each year. Mr. Tonkin will have charge of all this work as well as looking after all the mine timber for the mines of this company in Indiana, Cambria, Clearfield and Center counties. He is also a member of the firm of Caldwell, Tonkin & Pealer of Indiana, Pa., mining engineers and valuation experts on mining and timber properties.

A. H. Fay, the mining engineer, who has been in charge of accident and certain other statistics for the Bureau of Mines since the foundation of the bureau, has resigned to enter private employment. Mr. Fay is the author of numerous technical papers covering accidents in coal mines, metal mines, quarries, metallurgical plants and at coke ovens. For the past seven years he has prepared the material for the monthly bulletin of the Bureau of Mines on coal-mine fatalities.

Obituary

George F. Miller, a prominent coal man of Lewisburg, Pa., dropped dead while bowling in the Lewisburg American Legion club rooms recently. He was a graduate of the engineering school of Bucknell University. During the war he served in the Chemical division of the army. Mr. Miller was recently interested in a large coal deal in western Pennsylvania. He was 27 years of age and is survived by his widow.

Henry A. Porterfield, aged 56 years, after a few days' illness, died recently in the Duquesne Club, Pittsburgh, Pa. After graduating at Lehigh University in 1883 he practiced mining engineering in the coal regions near Wilkes-Barre, Pa. From there he entered the service of the Cambria Iron Co. Later he came with the Carnegie Steel Co., organizing the chemical department of the Edgar Thomson Steel Works. For many years he has been owner and manager of the Dexter Oil Co. He was a member of the Duquesne and Union clubs. Besides his widow, he leaves one brother, Howard H. Porterfield, of Foxburg, Pa., and two married sisters.

Trade Catalogs

Type B Portable Belt Conveyors. Portable Machinery Co., Passaic, N. J. Folder. Pp. 4; 6 x 9 in.; illustrated. Describes and illustrates its use.

Crouse-Hinds Imperial Headlights, Arc and Incandescent. The Ohio Brass Co., Mansfield, Ohio. Pp. 15; 6 x 9 in.; not illustrated. Price list 206; applying to catalogues 201, 202, 202A, 203 and 205.

The Rise of Steel Pipe. The National Tube Co., Pittsburgh, Pa. Bulletin 24A. pp. 7; 8½ x 11 in.; illustrated. Statistical data noting comparisons in the production of wrought and steel pipe.

Service Engineering Company. A bulletin published by this company. Pp. 31; 7½ x 10½ in.; illustrated. A brief synopsis of the company's engineering service of interest to manufacturers and works management.

W-S-M Car Dumpers. The Wellman-Seaver-Morgan Co., Cleveland, Ohio. Bulletin 49. Pp. 15; 8½ x 11 in.; illustrated. Description of this company's open-top railroad car dumper, showing some installations with working drawings of device.

Direct Current Steel Frame Motors. The Triumph Electric Co., Cincinnati, Ohio. Bulletin 2006 (Superseding Bulletin 491). Pp. 16; 6 x 9 in.; illustrated. A description of the motor and comment on its application to various industrial uses.

Ampere Hour Meters. The Sangamo Electric Co., Springfield, Ill. Bulletin 45. Pp. 31; 8 x 10½; illustrated. Description of the various types of ampere-hour meters made by this company. One of the large applications of these meters is on mining locomotives.

Small Cold Storage Rooms. Armstrong Cork & Insulation Co., Pittsburgh, Pa. Pamphlet. Pp. 36; 5 x 7 in.; illustrated. A treatise on "Nonpareil" corkboard insulation and illustrations of its use in cold-storage rooms. Details of construction of storage rooms noted

Jeffrey 34-B Entry Driver. The Jeffrey Manufacturing Co., Columbus, Ohio. Catalog 269. Pp. 15; 7¾ x 11 in.; illustrated. Description of a machine that cuts, breaks down and loads coal at the mine face. Finely illustrated by half-tones from photographs taken of the machine at work in the mine.

C-H Electric Space Heaters—The Cutler-Hammer Manufacturing Co., Milwaukee, Wis. Publication 494. Six-page folder; 3¾ x 6 in.; illustrated. Description and illustration of use. A large broadside has been published, in which are reproduced many current advertisements on this C-H heater, and so on.

Electrical Wires and Cables. The Rome Wire Co., Rome, N. Y. Catalog 19. Pp. 143; 8¾ x 10 in.; illustrated. A description of the various wires and cables made by this company together with price lists and useful information pertaining to bare and insulated wires for electrical purposes. Contains views about the plant showing equipment.

Coming Meetings

American Chemical Society will hold its annual meeting at St. Louis, Mo., April 13, 14, 15 and 16. Secretary, Dr. Charles L. Parsons, 1709 G. St., N. W., Washington, D. C.

New England Coal Dealers' Association will hold its annual meeting March 24 and 25, at Springfield, Mass. President, W. A. Clark, 141 Milk St., Boston, Mass.

National Retail Coal Merchants' Association will hold its annual meeting June 10, 11 and 12 at Detroit, Mich. Secretary-manager, Ellery Gordon, Philadelphia, Pa.

Indiana Retail Coal Merchants' Association will hold its annual meeting April 27, 28 and 29 at the Severin Hotel, Indianapolis, Ind. Secretary, R. R. Yeagley, Indianapolis, Ind.

Industrial News

Toronto, Ont.—It is reported that the Nukol Fuel Co., of 88 Bay St., this place, plans to locate a briquetting plant in Port Arthur or Fort William.

Washington, D. C.—The headquarters of the Executive Committee of the Bituminous Coal Operators' Central Competitive Field, are located in Room 419, Woodward Building, 15th and H Sts., N. W., Telephone Main 9546. John B. Pratt is the secretary.

Washington, Ind.—The Richards Coal Co., of Terre Haute, Ind., has obtained leases on coal land northwest and southwest of Washington and expects to open three new mines soon. This property is in Daviess County in the southern part of the state.

Glen White, W. Va.—The E. E. White Coal Co., at Stotesbury, is preparing to erect a number of dwelling houses and other buildings early in the spring. The Stotesbury mine in 1919 produced more coal than any other mine on the Virginian and it proposes in 1920 not only to maintain that record but to increase it.

Towson Heights, Baltimore, Md.—The Black & Decker Mfg. Co., of this place, announces the establishment of a permanent office and show room at 1436 S. Michigan Ave., Chicago, Ill. This office will be in charge of R. C. Ames, whose territory has been extended to cover the entire Mid-West. F. E. Marrion and J. N. LaBelle will assist Mr. Ames.

Johnstown, Pa.—Cosgrove & Co., coal operators of this place, purchased the holdings of the Sunnyside Coal Co. and the Ideal Coal Co., at a consideration of $500,000. The two mines are fully equipped and include 1,400 acres of unmined coal and the necessary buildings for operation. Production is to be increased from 800 to 2,000 tons daily.

Zanesville, Ohio—The Eastern Hocking Coal Co., chartered in Columbus, with a capital of $100,000, which purchased a tract of 15,650 acres of coal lands just south of Zanesville, has not started development work as yet. According to H. M. Runkle, secretary-treasurer of the company, no immediate plans for developing the tract have been formed. The tract is about three miles wide and 12 miles long.

Somerset, Pa.—One of the largest real estate deals reported in this section for several months was consummated recently when Charles Duppstadt, of Stonycreek Township disposed of his 163-acre farm underlaid with several seams of coal to parties of Weehawken, N. J., for $30,000.

Another deal of importance was that of the John M. Wolfersburger estate to Elizabeth P. Hocking, the consideration being $25,000.

Birmingham, Ala.—A new coal mine with a capacity of 1,000 tons per day will be opened by the Tennessee Coal, Iron, & R. R. Co., near Pratt City, according to the announcement of George Gordon Crawford, president of the company. The new mine will be known as the Hamilton slope. Mr. Crawford announced that it will be located on the Mary Lee seam and will be opened to provide for the loss in production of coal due to the abandonment of worked-out mines.

Columbus, Ohio—The annual stockholders meeting of the Lorain Coal & Dock Co., was held recently when the former board of directors was re-elected. Officers have been elected as follows: Edward Johnson, chairman of the board of directors; F. W. Braggins, president; A. L. R. Wildermuth, vice president and general manager; J. L. Johnson, second vice president and Ray L. Phelps, secretary-treasurer. The company operates mines in eastern Ohio, in Logan County, West Virginia, and in the Pomeroy Bend district.

Birmingham Ala.—The Sloss-Sheffield Steel & Iron Co. is said to be considering the buiding of a modern washery and screening plant at its Bessie mines in the western part of Jefferson County to replace the equipment now in operation.

The Tennessee Coal Iron & R.R. Co. is clearing a right-of-way preparatory to laying a railroad connection to the site of its new Hamilton slope near Pratt City. This operation will be on the line of the Birmingham Southern, a company-owned railroad with connections to all the principal works of the concern in this district.

Pittsburgh, Pa.—The Blaw-Knox Co., of this place, announces its purchase of the C. D. Pruden Co., of Baltimore, Md., manufacturers of standardized steel buildings for industrial plants. The following appointments are noted: J. Grier Campbell, purchasing agent of the Blaw-Knox Co., has resigned to become assistant treasurer of the C. D. Pruden company. Wm. S. Boyd, formerly assistant purchasing agent of the Crucible Steel Co., and purchasing agent of the Page Steel & Wire Co., has been appointed purchasing agent of the Blaw-Knox Co.

Charleston, W. Va.—Development work will be begun at an early date by the Youghiogheny & Ohio Coal Co. on a tract of 7,000 acres of coal land on Little Coal River. The company expects to be able to secure a production of 4,000 tons a day as soon as plants to be erected are completed. This company is already operating in Pennsylvania and Ohio, its various plants having an aggregate production of 2,000,000 tons per year. On March 1, E. C. Berkeley will assume the duties of general superintendent of the properties of the company, his headquarters being at Madison, Boone County, W. Va.

New York, N. Y.—The Wyngrove Line, Inc., has been incorporated in this State, with F. LeMaistre, as president, and C. B. Wynkoop as secretary and treasurer. Mr. Wynkoop is the president of the Cosgrove & Wynkoop Coal Co. The new concern is associated with Cosgrove & Co., Johnstown operators, and was organized because of the scarcity of boats. It will have its office in the same suite as Cosgrove & Wynkoop, 149 Broadway. The Cosgrove & Wynkoop Coal Co. has announced the appointment of H. H. Schrader, formerly with F. A. Kirk & Co., as head of its export coal department, which has had a steady growth. Arthur Carlson, of Middletown, Conn., will be the New England representative of the company.

Hamilton, Ohio—The Hooven, Owens, Rentschler Co., of this place, has opened two new offices; one in Philadelphia, 2129 Land Title Bldg., with C. M. Decker in charge; another office at Richmond, Va., with E. H. Fairchild as manager. This company has also made the following changes in the personnel of their other offices: E. S. Cooley, formerly with the Fall River Ship Building Co., is now connected with the New York office of the Hooven, Owens, Rentschler Co. Henry E. Balsley, formerly of the American Bridge Co., has been made manager of the Chicago office. R. O. Holman, formerly with the General Electric Co., is now in charge of all blowing engines for the Hooven, Owens, Rentschler Co. This company makes the well-known Hamilton engines.

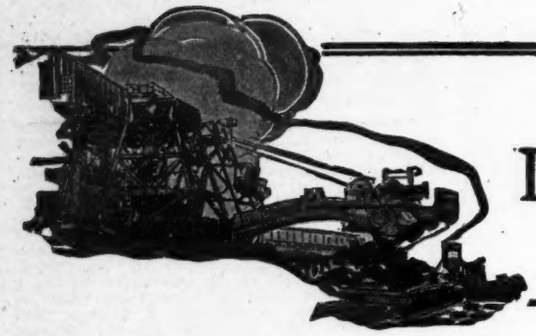
Chicago, Ill.—The Sullivan Machinery Co., of this place announces the following appointments: Louis R. Chadwick, hitherto branch office manager at Spokane, Wash., as manager of the company's branch at 30 Church St., New York City. Robert T. Banks, for several years associated with thi company as sales engineer at its El Paso, Tex., office, has been appointed manager at Spokane to succeed Mr. Chadwick. Arthur E. Blackwood, formerly manager of its branch office in New York City, as vice president, in charge of finance and accounting, with headquarters at Chicago. Louis R. Chadwick, for years manager of the company's office at Spokane, has been appointed manager at New York City, succeeding Mr. Blackwood.

Belt, Mont.—George H. Stanton of the G. W. Merkle Coal Co., contemplates an output of 1,000 tons of coal daily from the plant when completed. Those connected with the Merkle company include G. W. Merkle, of Belt; Sam Stephenson and J. R. Hobbins, of Great Falls, and W. R. Wilson, of Lehigh. Machinery has been ordered for cutting and preparing the coal for market. The property to be developed comprises about 2,160 acres of coal land which it is said will give the Merkle company one of the largest coal properties in this section of the state. It is planned to have the machinery in the Merkle mine in place within a couple of months. It is expected that the Wrenn Bros., of Boston, purchasers of the East Butte coal properties a month or more ago, will also have this mine running shortly.

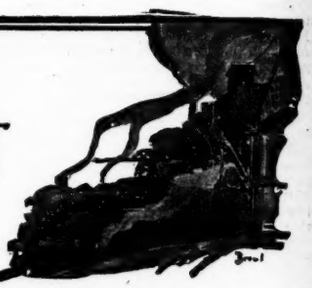
Reading, Pa.—The Reading Iron Co., of this place, announces the recent appointment of W. W. Frazier as assistant superintendent of the company's tube works. Mr. Frazier started his 20 years' experience in the iron and steel business as a draftsman, soon branching out into the engineering and later the operating side. He was successively connected with the National Tube Co., the La Belle Iron Works and the Youngstown Sheet & Tube Co. He was chief engineer of the A. M. Byers Co., left here to become assistant chief engineer of the big Government plant at Neville Island and later served in a similar capacity with the Bethlehem Steel Co., at Sparrows Point. The tube works of the Reading company, with which Mr. Frazier is now connected, is its largest plant, employing about 4,000 men, under the direction of J. H. Mathewson.

New York, N. Y.—The railroads returned to private ownership on March 1 and the Tidewater Coal Exchange went out of business. The latter will no doubt be succeeded by the Tidewater Transshippers' Association, Inc., formed by a committee of New York Coal dealers, affiliated with The Wholesale Coal Trade Association. At a meeting held on Feb. 17 at the Whitehall Club, more than one-third of the tonnage handled by the exchange was represented and it was decided to proceed with the formation of the new association. The secretary-treasurer of the association is to be designated as the commissioner of the association and there is to be a deputy commissioner at Philadelphia and also at Baltimore. The proposed rules also provide that the executive committee of the association may provide for the pooling of anthracite coal, if it is considered advisable. Charles A. Owen is the Chairman of the Organization Committee. It is expected that nearly all of the tonnage now handled by the present exchange will be handled by the new association.

Bluefield, W. Va.—It is understood that a deal was consummated during the third week of February under the terms of which the Pulaski Iron Co. became the owner of the Shawnee Coal & Coke Co., one of the early operations in the Pocahontas field The mines of the Shawnee company adjoin those of the Pulaski company at Eckman in McDowell County. The controlling interest in the Shawnee company was owned by Lynchburg capitalists; the production for 1919 was in the neighborhood of 100,000 tons. No changes in the executive staffs of either company are contemplated for the present, it is understood. About three years ago the ovens of the Shawnee Coal & Coke Co. were purchased by the Pulaski company. With the acquisition of the Shawnee mines and with another new mine (for which a shaft is now being sunk near Welch) in operation, the Pulaski Iron Co. will soon become one of the large companies of the Pocahontas field. Its annual production will be in the neighborhood of 400,000 tons a year.



MARKET DEPARTMENT



Weekly Review

Railroads Return to Private Ownership—Advance of Freight Rates Discussed—Car Supply Shows Little Improvement—Exports Continue Under "Permit System."

WITH the return of the railroads to private ownership Director-General Hines will retain jurisdiction over domestic distribution while the newly-appointed commission will handle bunker and export coal matters. This order, which became effective on March 1, did not please the operators, for it had been hoped that with the end of Government ownership of the railroads, the Fuel Administration would also be discontinued.

Demand for bituminous continues to be keen with all the sizes moving where available and the retailers willing to take almost anything they can get. For steam grades as well, all available stocks are quickly bought up. Little complaint is heard from local traction companies and public utilities, though their reserves are at a minimum.

Discussion of an advance on the freight rates on coal and general commodities is being heard in parts of the country. A large shipper is quoted as saying: "Even flat general increases would hurt badly, as coal freights are now too high. Increases may tend to force a larger consumption of oil in those districts closer to oil and thus cause a reduced consumption of bituminous coal."

As was the case prior to the restriction on bunkering, a good proportion of coal is going to tide for bunkering purposes and the local consumer is inclined to criticise the shippers for their eagerness in selling to this trade, alleging that the additional price allowed on bunkerage is the cause for the interest shown by these shippers. A fair amount of export business continues under the "permit system." Permits are only granted for business that was contracted before the embargo.

Production for the past week was far from pleasing to the miners because of the car shortage.

WEEKLY PRODUCTION

The weekly report on the production of bituminous coal, anthractie, and beehive coke, compiled by the Geological Survey, Department of the Interior, Feb. 28, 1920, states that the output of soft coal fell off 8.5 per cent during the week ended Feb. 21. Preliminary estimates place the total production (including lignite and coal coked) at 9,580,000 net tons, a decrease of 891,000 tons when compared with the preceding week.

The production of anthracite like that of bituminous coal fell off markedly during the week ended Feb. 21. Loadings by the nine originating carriers were 28,494 cars. This suggests a total output, including mine fuel and sales to local trade, of 1,463,000 net tons. Compared with the preceding week, this was a decrease of 310,000 tons, or 17.5 per cent. The cumulative production for the coal year beginning April 1, 1919, is now 80,906,000 net tons, a decrease of 6.3 per cent when compared with the previous coal year.

A decrease of 2,000 tons in the production of beehive coke was reported during the week ended Feb. 21. Slight increases in output in Alabama, Virginia, and Kentucky largely offset a decrease of 6,000 tons in Pennsylvania and Ohio. Production in the Connellsville region, Pennsylvania, as reported by *The Courier*, of that city, showed a decrease of 8,829 tons.

Atlantic Seaboard

BOSTON

Trade recovery only gradual. Embargoes against bituminous now lifted. Movement increasing. Coal still short at New York and Philadelphia piers. "Emergency" coal arriving. Hampton Roads despatch normal. Anthracite still embargoed all-rail. Barge movement shows signs of improvement.

Bituminous—Railroad operating conditions are distinctly more favorable this week, although the recovery is only gradual. Another blocking snowstorm on Feb. 24 interfered with traffic in the northern part of this territory and even passenger service was again suspended except on the through lines. Several of the large manufacturing corporations have offered men in large numbers to help the railroads clear up freight sidings and it is expected that in another ten days much of the congestion due to cars frozen to the tracks at this end will be relieved. The reports show that the Eastern roads are returning more empties to the intervening lines and should this continue it should in time very much improve car supply in the region.

The tight blanket embargo effective since Feb. 13 was lifted on Feb. 25, so far as it concerned bituminous, but current car supply is altogether too light to permit more than 20 to 25 per cent of normal output in Central Pennsylvania. A quantity of wagon-hauled coal is again offered, but there is little of the standard grades available at the fixed price. It is probable that the great majority of operators have contract orders which will take care of all they can produce in March.

The "emergency" coal arranged for through the Coal Committee at Washington is beginning to arrive here in better volume. There is some apprehension over short car supply at various New England terminals, several ships having been already obliged to wait three to eight days. Heavy demurrage charges are accruing, and this together with the export price carried by much of the diverted coal makes the delivered cost fully as high as coal men were predicting.

Governor Coolidge telegraphed President Wilson on Feb. 28 that the fuel shortage in New England was more critical and that the district would be in a serious condition if Federal control over coal exports was permitted to lapse.

The message said:

"Fuel shortage in Massachusetts and New England is more critical than was stated in the telegram of New England Governors of Feb. 16, due to the inability of the railroads to operate through the snow. Many ships are waiting to take coal at tidewater to bring to New England. It would be a great misfortune if there should be any interval after today when there was no control over the export of bituminous coal. If such control is permitted to lapse New England will be in a most serious condition."

In more cases than one, the regular agencies have been obliged to pay demurrage on chartered ships, only to be loaded with high-priced coal, their own coal having been seized for other requirements, either in New England or elsewhere. It is also a fact that the Regional Coal Committee has been put to it to find consignments for the coal which they represented was so urgently needed. We know of cases where cargoes have been consigned to brokers, the ultimate destination to be decided by the broker. This rather has the appearance of having cried "Wolf" too long and too loud. It will be interesting to watch further developments, for it is recognized that the great urgency is on behalf of the railroads, and not because industries are seriously in need of supply.

Hampton Roads despatch is practically normal. Steamers are now loading in one or two days, unless the flow of coal has been tampered with by the coal authorities at Washington. The trade is much interested to know what steps the government will take to enforce present regulations, now that the central railroad authority is passing out. There is a good deal of talk of contracts for the ensuing year, but most coal houses are hesitating over what policy to follow, in view of rules which are assumed to be still in effect and mandatory.

Anthracite—All New England is still embargoed against hard coal all-rail, except for the limited area which can be reached via Harlem River.

In Northern New England there are several communities where the prolonged cold weather is causing anxiety, but it is remarkable that the embargo against New Haven points that has been effective since Jan. 16 has called forth so little comment. In other words, much of New England is reasonably well supplied with domestic sizes.

Barges are moving much better than early in the month. A surprisingly large number has been ordered to repair-yards, largely because of ice-damage, but there are several encouraging signs that shipments during March will materially increase. At Port Richmond piers, 302 cars were dumped March 24 and this was the best day's work for several weeks. There are fewer cases of frozen coal and there are several reasons why loading should be much better the next week or two.

There is inquiry for the steam sizes, but the present embargo shuts off such ship-

ments as well as those of domestic sizes. Should the embargo be raised within a few days it is probable that there would be an active demand for rice and buckwheat.

NEW YORK

Seasonable weather for the past week has helped to consume considerable of current supplies of domestic sizes in consumers hands. As indicating shortage of coal in consumers' hands, buyers have not been sticking for favored sizes, but are taking gladly whatever wholesale and retail dealers have to offer.

Anthracite—With the thermometer just a few degrees above zero, frozen condition of coal at the various piers became more serious, reducing the dumping of cars into boats to a small fraction of normal dumpings. Loaded boats of either domestic or steam sizes are very scarce. Apartment houses were eager buyers of steam coals, taking any of the sizes that the dealers are in position to deliver.

Production has also been restricted somewhat by weather conditions and the trade is looking forward to first conferences of operators and mine workers to be held in this city on March 9 to discuss new wage scale. Present agreement expires on March 31, and so far, aside from an early presentation on the part of the miners of what they expected in the way of increased wages and reduced hours, nothing has been done. These conferences are expected to last several weeks.

Coal men are generally agreed that consumers may expect to pay higher prices for anthracite from April 1 on. They argue that not only will the operators have to pay higher wages to miners, but that other mining expenses have advanced to a point that they must be taken care of in the next price readjustment. Furthermore, railroad rates are expected to advance in line with the measures of the new railroad legislation that provides the carriers a profit of 5½ per cent. Loaded boats of the steam sizes have been in good demand but these have commanded good premiums over the dock prices.

Current quotations for company coal per gross tons at mine and f.o.b., Tidewater, at the lower ports are as follows:—

	Mine	Tidewater
Broken	5.95	7.80
Egg	6.35	8.20
Stove	6.70	8.55
Chestnut	6.70	8.55
Pea	5.30	7.05
Buck	3.40	5.15
Rice	2.75	4.50
Barley	2.25	4.00
Boiler	2.50	4.25

Bituminous—Bituminous continues in small supply, with many of the public utility companies finding it a difficult matter to secure enough coal to keep them going. New England has been able to pull through only by the wholesale confiscation of coal at Hampton Roads, the Central Coal Committee commandeering upwards of 50,000 tons at the piers there to ship to New England. This has proved a serious blow to exporters who had secured and arranged for steamers accordingly.

Weather conditions have been unfavorable to he movement of coal by rail and water even after it is loaded. Mines have not worked better than fifty per cent in Eastern regions for the past two weeks, owing to small car supply. Embargoes have practically stopped all shipments of rail coal to New England. This is responsible for action of government in commandeering of tidewater supplies.

The trade generally is much chafed at continued government restrictions. Action is being taken from several sources to have all restrictions removed, as it is argued that the coal people themselves are better fitted to distribute coal than the small body of inexperienced men that have had full sway for the past four months.

Due to the uncertainty of wages, railroad freights, etc., after the first of the new coal year, nothing has so far been done in the way of contracting. Usually, at this time, perhaps one-third or one-half of the year's output would be under contract in normal years.

Stocks generally, in every section of the East, are either entirely exhausted, or at the lowest point that they have been in since the memorable winter 1917-18.

Government prices on bituminous coals at the mines, for spot shipment, are as follows:

	Mine-run	Prepared	Slack
Central Pennsylvania	$2.95	2.95	2.95
Western Pennsylvania	2.35	2.60	2.35
Fairmont	2.50	2.75	2.25
Georges Creek	2.75	3.00	2.50

PHILADELPHIA

Anthracite demand very strong. Winter weather continues. Shortage of stove and nut begins to move pea. Consumption of all coal heaviest on record. Size change prospect more favorable. Chance of "slump" gone. Dealers anxious to stock up. Consumers show growing desire to store for next year. Steam sizes strengthen. Buckwheat all taken, and rice moves in big volume. Bituminous shows little change for better. Fewer confiscations. Embargoes help local consumers. Commission decision anxiously awaited.

Anthracite—The winter continues its record of being one of the real old time kind, and while there has been no snow of any moment recently, yet the temperature has hung consistently around the freezing point, and at times during the past week dropped down to 9 deg. F. All of this means a big consumption of fuel and the dealers are busy trying to meet the calls on them for coal. It has been one of the busiest winter's on record, even eclipsing the first war winter. Consumers' stocks put in last summer are reaching a still lower ebb and consumers are extremely anxious to have more coal.

Of course the demand still is for the larger sizes—stove and nut, and if anything these sizes are scarcer than ever. Dealers are urging the shippers to give them more tonnage and are no longer willing to accept the excuse of the operators that they have filled their orders up to the proportions of previous years. The dealers point out that the consumption this year is the biggest on record and they must have more coal to meet the demand. It is believed that the larger companies are making heavier than usual consignments "down East," as the reports from that region indicate that they are in a bad way for fuel.

Naturally when a scarcity of the larger sizes exists, the consumer, when he actually must have coal, falls back on the size that he can get and this happens to be pea coal. During the past week the movement of this size from the yards has grown very much in volume and the big piles of the dealers are at last beginning to decrease in size. It takes considerable urging on the part of the retailers to induce customers to take this size, as their antipathy to it has not decreased in the least.

Of course this condition is quickly reflected in the shipping offices and more than one dealer of late has actually asked to have pea coal shipped. In addition there is a growing impression that with the probable change in sizes there will be a demand for pea coal next season from that portion of the trade which has been wedded to this size. The more progressive dealers are actually reaching the point where they are willing to store as much of this size as they can find room for. The independents still have difficulty in getting premium prices for this size, and are willing at most times on straight orders for pea to make sales at the company circular of $5.30, although occasionally they are able to get $5.50 for it.

Change in Sizes to be Made

Many stories are afloat as to the outcome of the change of size agitation. At this time circumstances seem to be shaping themselves until it cannot almost be said that the shippers are at the point where they are ready to announce that the change will be made. The call for the change from the dealers has been so widespread, coming from the surrounding states, in addition to the almost unanimous call from the Pennsylvania dealers, that as it now stands it looks as if the proposition will be acceded to.

One of the larger companies before committing itself to the proposition finally is understood to be conducting tests of the newly-sized coal in actual burning and upon the result of this experiment hinges their decision. It is believed if the change is made that it will be done with an actual change of screens at the breaker, the plan being simply to mix the coal after it has been screened in the usual way.

With the first of April fast coming on the consuming public, not to mention the dealers, is displaying considerable interest as to what the spring prices will be. Many buyers are reluctantly becoming convinced that there will be no reduction and are ordering their next winter's coal to be put in during March. It certainly looks as if March will be one of the busiest months of the entire season, especially so if the conference between the miners and operators over a new wage scale shows any signs of being prolonged.

At this time all prospects of a so-called "break" in the coal market has vanished, for even should the consumer demand fall off, there is not a dealer in this territory who would not continue during the next four weeks to put aside every pound of prepared coal that he could possibly get hold of. It needs no particular foresight to see that any coal bought now will be a bargain later in the season.

The steam trade has picked up very nicely, until buckwheat coal of the white ash grade is becoming harder to get than it has been all winter, especially with the big shippers. Some of the special and higher priced buckwheat of the companies are a little bit slow, but are not expected to lag much longer in the face of the bituminous shortage. Rice has also increased in demand until the big companies are now moving heavy tonnages of this size from the storage yards, as the current production is not sufficient to meet the demand. Barley, however, is still difficult to sell and all companies have a big surplus of it.

The prices for the last month under the present winter schedule per gross ton f.o.b. mines for line delivery and f.o.b. Port Richmond for tide are as follows:

	Line	Tide
Broken	$5.95	$7.80
Egg	6.35	8.20
Stove	6.60	8.45
Nut	6.70	8.55
Pea	5.30	6.90
Buckwheat	3.40	4.45
Rice	2.75	3.65
Boiler	2.50	3.50
Barley	2.25	3.15

Bituminous—The demand for soft coal is far in excess of the amount that is reaching the city. Plants continue to lose time for the lack of fuel, although none has been idle for a long period, although a majority of them are running on close allowance at all times.

The fact that the railroads entering New England have been compelled to place embargoes against shipments to their lines on account of traffic being impeded by heavy snows, has helped the local situation. While this help is appreciated it is also realized that as soon as the roads to the Eastern country can handle additional traffic this coal will have to be paid back.

Recently there has been much protest on the part of consumers over having shipments in transit confiscation by the Railroad Administration and used to help out other industries. The method has called forth much criticism until there seems now to be a minimum of tonnage being diverted in this way. As a matter of fact consignees who had been notified that shipments had been confiscated are now actually receiving coal which they were previously told would not come forward.

Much Improvement Expected

Now that the railroads are back under individual control the coal trade is expecting improvement in the situation generally, and one of the first moves was to put into the trade the big number of low capacity wooden cars which had been sidetracked during the war. Quite a few of these cars are now reaching here loaded and this move has materially helped the situation. Traffic conditions have materially improved from the weather standpoint and such tonnage as has been produced has been moving to destination fairly promptly.

The scarcity of coal has once more brought into the market a fair production of coal from the wagon mines. These concerns are allowed an increase of 75c above the fixed price of $2.95 and when sold through brokerage houses, as it usually is, an extra 15c. is added, making the delivered price $3.85 per net ton. The brokers have their buyers in the region and there is quite a bit of competition for this coal. Some of the larger consumers are also endeavoring to get this coal first hand, but most of them have profited by their past experience that this helped the situation very little.

A good proportion of the local tonnage is going to tide for bunkers and the local consumer is inclined somewhat to criticise shippers for their eagerness in selling coal at tide, while the steady line trade is in such desperate need of fuel. However, the additional price allowed on bunkerage has the same attraction as usual, and shippers claim that under the present cost of production they are barely coming out whole at that. There also continues to be a fair export business conducted under the "permit system," as the embargo against such business is still on and the understanding is that permits are only granted for business that was contracted for prior to the embargo.

The trade is anxiously awaiting the report of the Bituminous Coal Commission and the report now is that an early decision can be expected, inasmuch as they have concluded taking testimony. Both shippers and consumers are anxious to start the contract business, but nothing can be done in this direction until they are able to fix a price. Even then the fixing of a con-

tract price depends entirely upon the finding of the commission, as it is barely possible that the conditions might be such that it would not be advantageous to enter into contracts at all. However, all concerned are hoping that the question of price will be satisfactorily arrived at.

BALTIMORE

Status of the coal trade after railroads are returned to private ownership big feature here as elsewhere. Car supply from bad to worse. Exports die from all points except Newport News. Serious conditions impend.

Bituminous—All last week the coal trade invaded or bombarded Washington to get a little common sense and failed. All wanted to know what was to be the status of business after the railroads are returned to private ownership. With the last of the permits to load, issued before Jan. 9, about cleaned up on export business, the only satisfaction that could be gotten from the Central Coal Committee officials was that it was all up to the President but that they thought it was a good guess that no exports would be allowed from any Eastern port, except Newport News, for many weeks. How this control was to be maintained was a deep dark secret.

On prices there were many guesses as to what would happen, especially as many are now openly selling coal above the government rates ,and it is like the old song "Nobody seems to care." Meanwhile coal men here predict serious conditions. Following the visit of four New England governors to Washington to complain of fuel famine the government diverted large quantities of coal from Curtis Bay and other Eastern points, the Shipping Board allocated ships to carry 100,000 tons from Hampton Roads, and coal was seized on the road for Northern diversion.

Then coal was transshipped from as far south as Clifton Forge, Va., and from Hampton Roads all-rail to New England. The result is a fearful congestion of coal cars at terminals and all along the line that can not be promptly unloaded or moved because of weather conditions. When the weather breaks New England will be flooded with coal-carrying freight charges that consumers will not pay The story of the strike period, when thousands of cars were sent long distances West and the coal then refused because of cost will be repeated.

Coal is still standing at Western points on this movement of months ago, and there is even talk of sending this coal all the way back to the original consignees in order to get the cars emptied. Just at present the car supply is wretched, largely because cars have been tied up North in this movement and West through shipmen's in cars that had been held for the export trade before the ban was slapped on.

At the outset of the present week the car supply on the Baltimore & Ohio and connections ran between 60 and 70 per cent. It has dwindled until at this writing the supply is only between 25 and 30 per cent and there are days when the total movement is only between 1,000 and 1,200 cars, less than one-third of normal. No wonder many consumers East are crying for coal and everybody—consumer and coal man alike—stands disgusted with the government management.

In passing it may be well to mention that the trade is still in the dark as to the pool prospects for the future, and there are many rumors afloat, including one that a move may be made to give the railroads the right to force all coal through the pool on export and bunker business.

Anthracite—The anthracite run continues fairly good as compared with the bituminous supply. Most of the dealers are getting some coal, although all are not getting the particular sizes desired. Deliveries in the city are difficult because of the snow and ice of an unusually hard winter.

Eastern-Inland

PITTSBURGH

Coal producers state that the car shortage this week is the worst in this whole period of car shortage. R. W. Gardiner, commissioner of the Pittsburgh Coal Producers' Association, states that on one day this week 35 of the 130 mines represented in the association were closed for lack of cars, and that the average car supply in the whole district on that day was only 17 per cent of the Government's rating.

One of the causes named for the fresh increase in the car shortage is the cold snap that began Sunday, Feb. 15, resulting in many carloads of coal being frozen, although if there had been the usual quickness of dispatch the coal could probably have been unloaded without difficulty. The probability seems to be that much of the frozen coal will not be unloaded until warm weather performs the function of thawing it out.

While it has been commonly remarked in Pittsburgh shipping circles in the past few weeks that better transportation could be expected upon the return of the roads to their owners March 1, it is now being asserted in some coal circles that railroad officials are paying so much attention to details attending the transfer of control that they are not giving the usual amount of attention to the furnishing of cars.

The steel industry has not had its production curtailed of late by coal shortage, but an expansion in operations that would otherwise have occurred has been prevented, mills being able to do no more than maintain their January rate of operation, which was about 83 per cent of capacity.

There is some coal to be had in the open market, but not a great deal The market remains quotable at Government limits: Slack, $2.10; mine-run, $2.35; screened, $2.60, per net ton at mine.

COLUMBUS

Some improvement in car supply is reported in most of the Ohio fields and production is correspondingly increasing. The output is still far below normal figures. Demand for all grades remains strong.

The car supply is now the chief factor in the coal trade in Ohio. Producers in every section are devoting their attention to getting out as large an output as possible and seeing that the cars reach their consignees. But there are many troubles that beset the operator and as a result many are working longer hours than usual. With confiscation of coal by railroads one of the chief disturbing factors, little progress can be made toward getting the trade on a solid basis.

Production in Ohio fields has been increased to a certain extent because of a better car supply. This applies particularly to the Hocking Valley, Pomeroy Bend and Jackson districts. Reports show that the car supply in those districts has been about 45 to 50 per cent and as a result a larger tonnage is being shipped. In the eastern Ohio field the output is still around 33⅓ per cent and little hope for improvement is seen.

Car Supply Only 45 Per Cent

In the Cambridge and Crooksville districts production has been about 45 to 50 per cent. The colder weather which now prevails will probably still further reduce the car supply, because of trouble in moving trains promptly. Influenza has also had its effect among the train crews.

The domestic trade is strong in every particular. Dealers are short of stocks and are clamoring for coal. Consumers have been placing orders briskly as their first stocks are exhausted, due to extra cold temperatures.

Dealers are compelled to reduce the size of orders in order to make available stocks reach to all consumers. Retail prices are firm at the levels which have been established under Federal control. Generally speaking, there has been practically no suffering in central Ohio territory among domestic users, although a marked shortage is reported.

There is a strong demand for all steam grades and all available stocks are quickly bought up. Public utilities are rather short and are operating from hand to mouth. Hospitals are fairly well supplied at present and public institutions are also in the market, and as a result there is a total lack of adequate reserves. Rubber factories have only a small surplus and the same is true of iron and steel concerns.

Retail prices in Columbus per net ton are:

Hocking Lump	$6.50
Hocking Mine-run	5.75—$6.00
West Virginia lump	7.25
West Virginia mine-run	6.75
Pocahontas lump	8.25
Pocahontas mine-run	7.50— 7.75
Pomeroy Lump	6.75
Pomeroy mine-run	6.00

CINCINNATI

Railroad confiscation and fuel committee diversions are embarassing coal companies greatly in this vicinity. The market was flooded with buyers of all classes last week seeking spot shipments, but a lot of them went away disappointed.

The car supply has not improved in the slightest degree. Operators claim that everything hinges on the car supply, as they have the labor, and could readily operate full time in clearing all old orders, and taking care of such immediate business as they have been turning down steadily. It is the opinion of operators here that Government restrictions will be removed at an early date and no two dealers seem to be of the same mind as to what will happen to the market Some say prices will start up at once, due to the shortage of cars. Others feel that prices will continue at the present level or at most, a little higher for the rest of the spring. A delegation of operators left for Washington last week, to put personal pressure to bear in the hope of getting cars.

Demand for steam coal continues keen, but retailers are fairly well stocked and due to the mild weather demand is so light that the retailers are not buying block coal as freely as they were, although there is a ready market for such supplies as can be produced.

Between 8,000 and 9,000 tons of coal would still be bobbing up and down in the barges on the Kanawha River had not the Campbell Creek Coal Co. decided to send it down despite the ice in the river. The barges were loaded but the government officers would not permit the raising of the dams in the river because of the weather conditions. The coal was needed in Cincinnati and the boats were ordered to rush the barges over the dams.

This was a hazardous plan, but the boats and barges rode the flood tide in safety and reached the Ohio river. There ice was encountered and the ice-breaker D. T. Lane ran around the barge fleet or forged ahead, pushing ice out of the way of the boats and its tow as the occasion demanded and the fleet reached Cincinnati without the loss of a pound of coal. The government officers on several occasions in the past have refused to open the dams.

Dealers are urging the public to place orders for smokeless coal, anthracite or coke for next winter, because as soon as the ratification of the Peace Treaty, American coal will be placed in competition with the world and naturally will be sold to the highest bidders.

The position of Cincinnati as the gateway to the coal fields has rendered her safe from fuel famine so far, although nonessential industries and some that are essential have been deprived of fuel. Influenza is not causing much trouble in the mine districts and it is reported that the smallpox epidemic in southwestern Kentucky is less serious.

Southern

LOUISVILLE

Heavy demand for domestic fuel, with car shortage such that retailers are reporting empty yards, and deliveries of only about one fifth what they need. Steam in good demand. Cold weather forcing heavier domestic consumption.

The demand for domestic fuel continues very keen, with all sizes moving, and retailers willing to take most anything they can get just now. Car shortage is showing improvements in spots, but the Kentucky fields as a whole, especially Harlan county, show no material improvement. Mine operators are having trouble in running half time, and report that labor is becoming more dissatisfied.

It is held that the operators are losing large sums daily through not being able to take advantage of a good market, which is resulting in operators in other fields with better car supply being able to divide up the business, which will mean that if production in other fields catches up with demand, operators in the Kentucky fields may get cars after there is no demand to fill.

No New Business Accepted

Kentucky is so steadily short of cars and unable to accept business that it is held by the operators to be injuring the fields. One operator remarked that while the Kentucky operators are reporting inability to secure cars, other districts are having very little trouble, and the Railroad Administration authorities are claiming that there is no serious shortage of cars.

Mines on the Louisville & Nashville lines are still being discriminated against, and while car supply on the Illinois Central lines in western Kentucky is worse than it has been, it is not as bad as on the Louisville & Nashville lines in the same field. Western Kentucky as a whole is somewhat better off than eastern Kentucky. The Hazard fields is doing much better than formerly, but the situation in the Harlan, Straight Creek and Jellico districts is about as bad as it has ever been.

In the Elkhorn and Northeastern districts of the state it is reported that conditions are improving and car supply is better, some sections being fed by lines that are in

the car pool, and which are having no decided difficulty in getting cars.

Movements to control prices of foodstuffs, etc., sold through commissary mines, resulting in Federal warrants being issued for a few mines recently, will probably slow down somewhat now, for in the Kentucky High Cost Commission, all but two members of the Louisville division have resigned.

Discussion of advanced freight rates on coal and general commodities after the railroads go back to private control are being heard. C. D. Boyd, traffic manager for the three leading associations of the state, in discussing this matter said: "Even flat general increases would hurt badly, as coal freights are now too high. Increases would force larger consumption of oil in districts closer to oil, and at the same time reduce consumption of bituminous."

One interesting factor in the argument between coal and oil is that oil is rapidly advancing, and even the cheaper fuel oils which do not produce much gasoline are higher. Kentucky crude oil which has been selling at $2.60 a barrel at the well for the past year or more, is now quoted at $3.25 a barrel, with prospects of a mid-summer price of $3.50, which has resulted in increases in all petroleum products. Oil operators are not being governed like coal operators, and are forcing up the price through refusal to turn holdings over to pipe line companies or make shipments unless they get their price. On the last price advance in eastern Kentucky the largest runs of months were shown.

Lake Region

BUFFALO

Bituminous—There is much complaint just now of the selling of coal, especially at the mines, for considerably more than the regulation prices. To this the consumer seems to be contributing, for he finds that the jobbers cannot offer coal in much amount, so he goes to the mining districts and offers a premium. It is reported that coal, which should sell at $2.50 at the mines, is held for $4 and even more. The consumer supposes that he is obliged to pay these prices and so gets around the jobber entirely.

What will come out of this is not to be said now. The Government does not seem to be taking any notice of it and it may not. Buffalo jobbers are not following the practice to any extent and they may come out best in the end, but it is very discouraging to sit by and see others taking advantage of the shortage of coal in a way that one may not feel like following. At the same time the confiscation of coal by the railroads is going on much as formerly, so that when the jobber is through his day he has little to show for the effort he has made to stay in the trade.

There would be complications enough in the trade if these avoidable ones were left out of it. Cars are very scarce and will be at least till the loaded ones that have been held up by snow are unloaded and put back into regular business again. About the only reason for satisfaction is that the supply did not run down till the factories had to shut down. Nobody out of the trade will ever know how much work has been done to keep the supply up. The consumer is accused of having a way of forgetting it all just as soon as he is past the stress, but that may be a mere matter of trade. Everybody gets what he can at a price as low as possible and is ready to repeat the operation.

Everybody wonders when there will be an end of this terrible winter. Buffalo has had its share of cold weather, but the snow is not nearly as deep as it is at other points South and East. There is, though, snow here that has been with us since November and it is high time it was gone. At the same time there are predictions that as soon as the spring thaws are here the demand for coal will drop off seriously. It is a fact that few consumers have much coal ahead and most of them have very little, but they do not intend to stock up any more than they must till the trade settles down to something.

The regulation prices continue as before, no matter if some people are disregarding them. Quotations: $4.70 for Allegheny Valley sizes, $4.50 for Pittsburgh and No. 8 lump and three-quarter, $4.25 for all slack, $4.60 for smithing and $4.70 for smokeless, per net ton, f.o.b. Buffalo.

Anthracite—The supply is not good yet and it may take some time to restore the movement from the mines. The car supply is poor and the entire cutting off of the shipments during the great storm of Feb. 14 has had an effect on this market that is anything but good. The consumers were pretty well supplied, better than for several winters, or there would have been great difficulty.

As it is the shippers and distributors are finding it hard to keep up with the needs of this market. Nobody is frightened, but if a state of panic, such as existed in recent winters, the situation would be bad. The long waiting for the severity of winter to pass has no reward yet. The month of February is much colder than was expected, in view of the cold weather earlier in the winter. It looks now as if this winter would be decidedly colder as a whole than that of two years ago. Still it cannot last much longer. Everybody sighs to see the cold days return again and again, when it would seem to be time for the stress to be over.

As soon as the sunny days of March do come the situation will change speedily, for it is always the case for the demand to drop off fast in early spring. Reports from the mines are not reassuring, for there are prospects of labor difficulties in the spring and the miner as a rule is much harder to control than he used to be, for he has a notion that he does not need to work steadily, and there is trouble if an effort is made to keep him busy.

CLEVELAND

Receipts continue about 35 per cent of normal and with cold weather recurring, the shortage is as acute as any this winter. It is expected a price of $3 will be sanctioned for No. 8 mine-run and slack and $3.25 for prepared sizes, and offers to contract on this basis have been made. Anthracite receipts are good; Pocahontas bad.

Bituminous—Steam-coal users continue to limp along with supplies not much over one-third of normal. Some actual shut downs and curtailed operating schedules as a result of no fuel are reported. Diversion of coal to meet the needs of the largest public utility continue, the utility having only a 48-hour "rubber" in the way of slack. Were one day to pass without any coal being moved into the city a third of the industries would be compelled to close. Receipts at present are on a par with the average of the past two months, but demands because of the extreme cold weather have made the situation as serious as at any period this winter. Every steam-coal user is only about a day's supply ahead.

Some No. 8 district operators with headquarters here are predicting that when the President's Coal Commission reports it will grant miners only a small additional wage increase but will permit the f.o.b. mine price of No. 8 slack and mine-run to be advanced to about $3 and No. 8 prepared sizes to $3.25. This would mean an advance of 65c a ton. At least one operator has been approached by a steam-coal user with a proposition to contract for his needs at $3, provided that is the new price.

With the freight rate from the No. 8 field to Cleveland $1.35, this would make slack and mine-run, delivered Cleveland, $4.35 and prepared sizes $4.60. Retail dealers are allowed $2.08 additional for delivery and profit in sales to manufacturers, $2.65 to churches and apartments and $2.80 to dwellings. The feeling in the local trade is unanimous that prices will be advanced; the only point of speculation is how much. It is believed that new rules for car distribution will be worked out by the commission; on this point operators believe the commission will lay especial emphasis.

Cleveland operators are hopeful that the middle of March will see the car situation much improved; in fact, some are predicting it will be doubled as soon as the railroads have settled down to private operation. Opening of the lake trade in April also will work for improvement, as the additional cars made available for the iron-ore trade are used to carry coal back to Lake Erie ports.

Labor at the mines now is adequate for the car supply, but once near-normal operations are made possible the labor shortage will make itself felt, operators fear. Reports of operating losses are heard on all sides. An operator with a mine on the Pennsylvania was able to operate only 52 hours in the first three weeks of February. A mine owned by the same operator on the Wheeling & Lake Erie was operated 61 hours in the same period. Improvement in car supply on the Pennsylvania is expected to be greater than on any other road.

Anthracite and Pocahontas—Receipts of anthracite are reported quite good and dealers are not far behind on their deliveries. Receipts of Pocahontas are practically negligible. Domestic demand for anthracite, Pocahontas and bituminous is heavy. Dealers no longer wheel coal into cellars; dumping at the curb is the rule, with labor so short. Prices are unchanged on anthracite and Pocahontas.

Lake Trade—Lake shippers have changed their minds on the opening of the season; instead of a late opening, provided navigation is possible, they believe it will be fairly early. Upper lake docks, which last spring were congested, will be pretty bare by April 1. Outlook for an improved car supply is better, and it appears that more lake coal will be available late in March and early in April than appeared possible a few weeks ago.

While some lake coal has been placed, no prices have yet been named. It is believed whatever price the coal commission names will rule for the lake trade; normally, the lake price is somewhat higher than that named for the lower lake trade. The talked-of price is $3 for mine-run, with the freight from the No. 8 field to Lake Erie ports $1.33.

Prices of coal per net ton delivered by dealers in Cleveland are:

Anthracite—Egg, $12.20@12.40; chestnut, $12.50@12.70; grate, $12.20@12.40; and stove, $12.40@12.60.

Pocahontas—Shoveled lump, $9.00@9.25; and mine-run, $8.00@8.25.

Domestic Bituminous — West Virginia splint, $8.30; No. 8 Pittsburgh, $6.85@7.00; Massillon lump, $7.40@7.65; Cannel lump, $11.00; and Coshocton lump, $7.35.

Steam Coal—No. 6 slack, $5.75@6.00; No. 8 slack, $5.80@6.00; Youghiogheny slack, $5.25@6.10; No. 8, $6.35@6.60; No. 6 mine-run, $6.30@6.85; and No. 8 mine-run, $6.30@6.85.

DETROIT

Obstacles attending the transportation of bituminous coal into Detroit, ranging from car shortage to embargoes, were augumented with the coming of a heavy snowfall, Monday. To just what extent the storm will become an impediment is not yet certain.

Bituminous—That continuance of the power supply of many of the manufacturing plants of the city is still a matter of considerable uncertainty is made clear in a statement by J. W. Brennan, purchasing agent of the Detroit Edison Co., who says that for some time past his company's daily receipts of bituminous have averaged about 800 tons a day less than consumption.

To make good this deficit in daily supply it has been necessary for the company to use coal liberally from its stock piles, with the result that it now has, Mr. Brennan says, only about four days supply ahead. Under these conditions the delaying of shipments by the storm would be likely to create a crisis forcing suspension of power service to customers other than those that might be classed as essential industries.

Jobbers and wholesalers are still receiving reports from the mines that in many instances they are able to operate only two or three days a week because of insufficient supply of cars for loading or because of the in ability of the railroads to provide locomotives for moving cars.

Complaints are also coming to the jobbers that the Railroad Administration is continuing the confiscation of shipments sent to Detroit and is diverting the coal to provide for railroad requirements.

Anthracite—Though anthracite is not coming into the city very freely, the situation just now seems to be occasioning little anxiety. Jobbers calculate that household consumers are in a comfortable position and that the retailers though not carrying very large stocks will be able to supply their customers.

Lake Trade—Reports coming to vessel owners indicate that coal is being moved rapidly from docks on the upper lakes and that there will be an active demand for vessel capacity to load coal at the opening of navigation, providing the railroads are then able to supply a sufficient number of cars to get the coal from the mines to loading docks. So far no coal has been loaded for shipment up the lakes. At this time last season several cargoes were afloat.

Middle West

MIDWEST REVIEW

Coal is now so scarce in the Middle West that retail dealers and purchasing agents for manufacturers appear to have moved in a body to coal centers like Chicago, Indianapolis, and Peoria, and having once arrived, proceed to besiege the offices of operators and wholesalers in the vain hope of purchasing an additional tonnage of coal.

The car shortage, which has been with us for some time past, is now beginning to make itself felt throughout the middle west. Operators who contracted say 40 per cent of their output are now having

great difficulty in supplying their contract customers, let alone their retail and miscellaneous trade. To add to the seriousness of the situation the car supply continues to grow worse, rather than show signs of improvement.

A certain Ohio Congressman was in Chicago a few days ago, and addressed the members of the Union League Club, on the railroad question. This club has a large number of coal operators in its membership, and the address was listened to with great interest. Among other things said was that as soon as the roads were returned to private ownership approximately two hundred and fifty thousand men would be discharged. These men had been placed with the various roads through the Railroad Administration, and are now considered unnecessary help, by the private owners of the roads. This case of overemployment is only one example of the extravagance and mismanagement of the administration.

In spite of repeated promises for better service coal is still moving slowly, and it is not an uncommon thing for a car of coal from West Virginia or southeastern Kentucky to take from four to six weeks to go from the mines to some point in either Illinois or eastern Iowa. This, coupled with the car shortage we have already touched upon, is perhaps the main factor responsible for the present coal shortage.

A number of our most prominent coal men have made predictions as to business conditions during the coming season. Practically all of these opinions are very hopeful and optimistic. It is thought that the car supply will improve, perhaps slowly, but improve some, and a strong demand for coal for a number of months is taken for granted by almost everyone. These predictions for excellent market conditions are based on the fact that there is, at the present time, a coal shortage in this country which will have to be made up.

CHICAGO

Chicago wholesalers, as well as operators, who have mines in Illinois and Indiana, are combing the market very thoroughly in an endeavor to purchase coal. Operators are interested because they are not receiving a sufficient car supply at their mines to take care of their contract customers, let alone miscellaneous orders from retailers and steam plants.

Wholesalers are buying because they are not getting nearly enough coal from their regular source of supply. Chicago retail trade is coming into the market strong, and are now very grateful to receive mine-run, even of the poor grades, whereas a couple of weeks ago they were rather particular if their lump coal was not prepared up to standard.

But little anthracite is being received in Chicago of late, and retailers are pretty generally complaining about the preparation of the anthracite which does arrive. It is claimed that the preparation is very poor and that there is an inordinate amount of slate in practically every shipment. Complaints made to the shippers, on this account, always result in the same thing—namely, labor at the mines is so independent and careless that little can be done in the immediate future towards betterment.

It is believed that within two hours Chicago could hold an impromptu convention of the majority of coal purchasers in the Middle West. Various factories tired of waiting for coal salesmen to call upon them, have sent their purchasing agents here to Chicago, and this, combined with the large number of retail dealers here looking for coal, has resulted in a demand for fuel about three or four times in excess of the present supply.

ST. LOUIS

Market in a critical condition account shortage of coal. Mines averaging less than two days per week. City supplied but country districts without fuel with cold weather and future prospects bad. Miners dissatisfied.

The situation instead of showing improvement has been getting worse. Miners in the Standard and Mt. Olive districts are averaging less than two days work per week on commercial coal. The past week has been worse than any other. On the Mobile & Ohio R.R. practically no commercial coal has been shipped. Everything being mined is taken for company fuel.

There is much dissatisfaction among the miners in both of these fields over the amount of working time they get, contending they cannot live on the money they are getting if this is to continue. Many of the miners are in debt to the merchants in their towns, with no hope of getting out before spring, and then they do not know whether there will be steady work at that time, even if there are plenty of cars.

With the miners in this condition, there is evidently trouble ahead for the operator in the matter of wage scale. Everything produced finds a waiting market and were it not for government prices, there is no telling what coal would be bringing in the St. Louis territory right now.

Locally there is a shortage of fuel, but everything is kept going. However, outside of St. Louis proper many steam plants have been obliged to shut down and many towns have been without domestic fuel for several weeks. The places that are hit hardest are the local stations on the Iron Mountain line south that carry rates only from the Iron Mountain lines in Illinois.

Throughout the Carterville field of Williamson and Franklin County conditions seem to grow worse, although they are not as bad, generally speaking, as in the Standard and Mt. Olive districts. Most of these mines are on two or more roads and they get a pretty fair car supply, whereas in the Standard and Mt. Olive fields nearly all mines are on one road. That gives the mines in the Carterville fields about three days car supply a week, but the railroads draw heavily.

In the Mt. Olive and Standard districts the railroads are taking about half of the coal produced. On the Missouri Pacific R.R. the mines are prohibited from loading any commercial coal because the amount of cars furnished are insufficient to give the Missouri Pacific its tonnage of railroad fuel. An order went out one day this week to confiscate fifty cars of coal. The best they could find on road was thirty eight cars and then they began confiscating coal in the St. Louis terminals that came from other fields.

A check up showed at that time that there was 105 per cent of coal equipment on the Missouri Pacific rail and an investigation developed that this equipment instead of being held for coal carrying is permitted to be loaded with logs to make automobile wheels and spokes and kindred luxuries, and the equipment is shipped to all parts of the country. On account of the shortage of box cars it is used for commodities that until the last year were never shipped in coal cars before. It is not a question of shortage of equipment. It is a question of incompetent railroading.

The weather is cold throughout the Middle West. The movement of everything is slow and the shortage of fuel continues to increase. It is possible that when the railroads pass into private ownership after the first of March that there will be a difference in everything.

The papers in the Middle West accuse the railroads of laying down on the job right now to show up a better contrast under their own supervision after March 1. There is practically no anthracite moving into St. Louis and no smokeless at all. The movement of coke to outside points is good. There is practically no Franklin County coal coming in and all prices are the same as last week.

MILWAUKEE

Coal in brisk demand. Supply depends solely upon rail facilities at present. Prices remain unchanged, but an advance is seemingly in prospect.

The coal market at Milwaukee is maintaining an even balance, despite an unceasing demand upon sources of supply which are about as uncertain as the weather. Everything depends upon the inflow by rail at the present time. This movement is slow enough under normal circumstances, but the least obstruction to traffic pinches the market.

Prices continue unchanged simply because dealers shrink from becoming involved in the popular sleuthing into high costs, which has reached the stage of local committee investigations; but a rise all around seems to be impending unless the situation changes materially. Rail service is poor and the outward movement of stocks held to protect contracts is slow. Milwaukee could handle twice as much coal as it does at present if rail facilities were equal to demands upon them.

Coke

CONNELLSVILLE

The coke situation shows no material change. Car supplies in the Connellsville region were somewhat poorer last week than previously, but there has been a corresponding improvement this week.

Production on the whole has been remarkably steady since the first of the year, but with increasing demands on the part of the blast furnace industry, made up only in part by increased production of byproduct coke, the apparent shortage is as great as ever Several furnace interests would willingly pay considerably more for prompt coke, if permitted.

It is now generally thought that as long as winter weather obtains the railroads will not be able to increase their car supplies to the Connellsville coke industry, but it is likewise felt that the advent of mild weather, which is unduly postponed, will automatically bring prompt relief. As has often been the case in the Connellsville coke industry the change in the attitude of furnaces as to coke supplies may be spectacular.

Often it has occurred that at one time the furnaces would be bidding higher and higher prices for spot coke and a fortnight later would be instructing shippers to suspend shipments on contracts. A sharp improvement in transportation conditions would bring about three things a reduction in the quantity of coke in transit, resulting in correspondingly heavier receipts at furnaces, an increase in the amount produced and shipped, and the picking up of the considerable tonnages of coke that the old fashioned ovens have stocked in the past few weeks. The modern push-ovens cannot stock coke. There is scarcely any coke obtainable in the open market except off grades, which command the full Government limit. The market is quotable at Government limits: Furnace, $6; foundry, $7; crushed, over 3-in., $7.30, per net ton at ovens.

The *Courier* reports production in the Connellsville and Lower Connellsville region in the week ended Feb. 21 at 235,157 tons, a decrease of 8,829 tons.

BUFFALO

There is report of profiteering in the coke trade as well as in coal, so that the regular price of $9.60 for 72-hr. Connellsville foundry is often up $1 or more, so far as the asking price is concerned.

Furnace is also held for more, though it mostly goes for $8.60 on contract, with off grades $7. Domestic sizes sell well at $7.75 and breeze less actively at $5. The prospect of a heavy smelting year is good. Already there is enough iron ore sold to insure the bringing down of 60,000,000 tons by lake. Buffalo will as usual supply a number of furnaces East of here, some of which have already bought liberally. No vessel chartering has been done yet, but it is expected that the 1918 rate of $1 per ton from Lake Superior will be paid.

Foreign Freight Rates

		Tons Displaced
Genoa/Leghorn	$26.50 —	4,000
Spezia/Savona	26.50 —	1,000
Piraeus	28.50 —	1,000
Trieste/Venice	31.00 —	800
Algiers	26.00 —	800
Cadiz/Bilbao	23.50 —	1,000
Barcelona	26.00 —	1,000
Antwerp/Rotterdam	22.50 —	1,000
Lisbon	22.50 —	1,000
Gothenburg	24.00 —	1,000
Marseilles	26.00 —	1,000
Stockholm	26.00 —	800
Hamburg	25.00 —	1,000
Rouen	23.00 —	1,000
Malmo	25.00 —	800
Pernambuco	16.00 —	500
Bahia	16.00 —	500
Rio	17.00 —	1,000
Santos	18.50 —	600
Rio Grande do Sul	19.50 —	500
Buenos Aires or	16.00 —	1,000
La Plata or	or	
Montevideo	17.50 —	750
Para	15.00 —	500
Rosario	19.00 —	750
Bahia Blanca	17.50 —	1,000
To Nitrate Range	12.00 —	1,000
Havana	7.50 —	600
Sagua or Cardenas	9.00 —	300
Cienfuegos	9.00 —	500
Caibarien	9.50 —	300
Guantanamo	9.50 —	300
	9.00 —	400
Manzanillo	9.50 —	300
Bermuda	9.00 —	300
Bermuda p.c. and dis. free		
Kingston	9.50 —	400
St. Lucia	11.00 —	500
Barbados	11.00 —	500
Santiago	8.50 —	500
	9.00 —	400
Port of Spain, Trin	11.00 —	500
Curacao	10.50 —	500
Free p.c. Curacao		
Demerara	13.00 —	400
St. Thomas	10.00 —	500

All above rates gross from charter.